

JPRS-EEI-85-057

28 June 1985

East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS



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INTERNATIONAL AFFAIRS

CSSR MACHINE-TOOL, FORMING-MACHINE EXPORTS TO USSR TO INCREASE

Prague SVET HOSPODARSTVI in Czech No 40, 1985 p 2

[Article by -ov- under the rubric "Czechoslovak External Relations": "Czechoslovak Machine Tools and Forming Machines. Deliveries to the Soviet Union Will Increase"]

[Text] Deliveries to the Soviet Union significantly influence the dynamic development of the Czechoslovak machine-tool and forming-machine industry, and the expansion of Czechoslovak foreign trade. The Strojimport Foreign Trade Enterprise of Prague has been handling trade with the Soviet Union in these commodities for more than 30 years. With the Moscow All-Union Stankoimport Association, and Avtopromimport, Metallurgimport and other Soviet partners, it has been achieving ever-greater turnovers. In 1986-1990, exports of Czechoslovak machine tools and forming machines are expected to increase 40 percent over the preceding five-year period. With the Czechoslovak manufacturers, Strojimport is fulfilling in this field also the obligations stemming from bilateral and multilateral specialization agreements.

Czechoslovak enterprises have built tens and thousands of machine tools and forming machines for the Soviet economy. More than 45,000 are in operation at present, and 3,000 are supplied each year for renewing the Soviet enterprises' stock of machinery. The value of these deliveries usually amounts to a third of Strojimport's total export of such commodities.

Not only quantitative indicators characterize the Czechoslovak machine-tool and forming-machine exports to the Soviet Union: there is also a clear orientation on high technical standards for the entire product mix. Conventional Czechoslovak machine tools and forming machines operated reliably in Soviet plants during the period of postwar reconstruction, and there is now constant Soviet interest in the improved and new types. Besides the interesting novelties that Strojimport offers Soviet users each year in this product mix, it also strives to accommodate investors who require highly sophisticated machinery and equipment.

About 600 numerically controlled machines have been supplied to the Soviet Union so far. These include first of all the 50 machining centers from TST

TOS [Engineering Machinery Plants, Machine-Tool Factories] of Kurim, and TST ZPS [Engineering Machinery Plants, Precision Engineering Works] of Gottwaldov. Since 1984, the machining centers of the milling type from Kurim are being supplied with ZPA [Industrial Automation Plants] NS 720 continuous computerized numerical control systems. Soviet plants have in operation various numerically controlled knee-type milling machines from TST TOS of Kurim; VR 5 NB jig drilling machines from TST [Engineering Machinery Plants] Kovosvit of Sezimovo Usti; and also WHN 9 B and WHN 13 A horizontal boring and milling machines, with Tesla NS 250 digital displays, from TST TOS of Varnsdorf. Lately the Soviet partners have been ordering from this manufacturer a considerable number of W 100 A horizontal boring and drilling machines, with Tesla NS 140 digital displays. From the production program of TST TOS of Hulin, the Soviet Union knows from years past the SKJ 8, 10 and 12 single-column turning and boring mills equipped with Tesla NS 113 digital displays, and it is also familiar with the currently supplied SKQ 8, 12 and 20 NC vertical turret lathes that have NS 421 ZPA continuous numerical control systems. This manufacturer, too, has broadened the assortment offered to Soviet customers. In 1984, Strojimport supplied to the Soviet Union machines of the new SKI-SKIQ series equipped with NS 510 ZPA and NS 560 Tesla continuous CNC systems.

Czechoslovak lathe manufacturers, too, are honoring the more demanding requirements of Soviet plants and have come out on the market with new models that have Tesla NS 660 continuous CNC systems. Strojimport began already in 1983 deliveries of the new SPT 16 NC and SPT 32 NC models from TST Kovosvit of Sezimovo Usti, and also of the SPS 25 NC and SPS 2/25 NC models that have replaced the previous models SPR 63 NC and SPR 100 NC.

The integrated production section for machining gearbox parts, which Strojimport is supplying for an engineering plant in Vitebsk (Belorussian SSR), will provide an outstanding opportunity for the application of Czechoslovak NC machining technology in the Soviet Union. The equipment will be shipped in 1985-1986, and its startup is scheduled for 1987. This production section will consist of eleven FQH 50 A and MCFH 40 machining centers, supplied by TST ZPS of Gottwaldov, and will be computer-controlled. It will have provisions for changing tools and workpieces automatically, and will be equipped with an automatic stacker for storage.

In addition to the Engineering Machinery Plants concern enterprises, an important supplier of the Soviet Union is also the Skoda Concern of Plzen. About 1,000 of its horizontal milling, or boring and milling, machines are in operation at Soviet plants.

There is a changeover to technically very demanding deliveries, specifically to sets for manufacturers of heavy forming machines, also in the case of Skoda equipment. The first Skoda PC 4 center for the machining of nonrotating parts, based on the principle of the NC - N Skoda system, was shipped to Voronezh in 1983. According to contracts already signed, in 1985-1987 the Skoda Concern will build similar machining centers for plants in Barnaul, Odessa and Ivano-Frankovsk, but with a new generation of W 200 HB NC machines and with NS 720 ZPA continuous CNC systems. Stankoimport of Moscow has expressed interest in additional machining centers, the planning and design problem for which is solved by the manufacturer.

The Skoda Concern is supplying Soviet industry each year also with heavy center lathes. In 1984-1985, for example, it supplied four turning workplaces for the Soviet shipbuilding industry; they were modified in accordance with the customer's specifications. The largest center lathe, the Skoda SIU 400 T with a turning length of 15 meters, was shipped to the Khabarovsk Turbine Plant in 1984.

Other Czechoslovak enterprises, too, are supplying advanced machine tools for the Soviet Union. TST TOS of Hostivar is supplying preset cylindrical grinding machines for the Soviet automotive industry, and TST TOS of Celakovice is supplying gear-cutting machines. This amounts to about 100 machines a year. The Soviet bearings industry buys each year about 160 preset grinding machines from CZM [Czech Motorcycle Works] of Strakonice, including short lines consisting of such machines and equipped to move the workpieces between operations. Strojimport is supplying the Soviet partners also with practically the entire line of forming machines made by TST Smeral Works of Brno, Piesok Engineering Works, Zdar Engineering Works and Foundries, TST Smeral Works of Trnava, and other manufacturers. The Vihorlat Enterprise of Snina, for example, traditionally supplies more than 160 machines a year for pressure casting. An especially noteworthy order in the area of forming equipment was the one that TST Smeral Works of Brno received for eight TWK 3150 forging lines, manufactured according to the customer's planning and design problem, for forging the teeth of the combine's sickle bar. The forging lines were supplied in 1982-1985 to the Gomsel'mash plant in Gomel, for the Soviet Union's Food Program.

Plants for the general overhauls of Tatra trucks illustrate the orientation on the increasing proportion of production systems and turnkey construction within the deliveries. The first plant supplied by Strojimport was placed successfully in operation in 1984 in Nizhnevartovsk, in the Tyumen petroleum region. It was designed to completely overhaul six hundred Tatra 148 trucks a year, and to overhaul 2,000 engines and subassemblies. The design capacity has already been doubled, and a further expansion is being planned. In 1986-1990, the Soviet petroleum industry will be supplied the technology and construction work for a plant in Buguruslan, central Volga Region, to repair Tatra 148 and the new Tatra 815 trucks. The USSR Ministry of Nonferrous Metallurgy will be supplied the technology for a similar plant in Yakutsk in the Far East, and the technology and construction work for one in Semipalatinsk in the Kazakh SSR.

In 1984-1987, TST Kovofinis [TST Metal Finishing] of Ledec nad Sazavou is supplying metal-plating lines for farm machinery plants, the Don Tractor Factory, and the automotive industry. The lines will be shipped to Rostov, Simferopol, Telavi, Taganrog, Leningrad and Talin.

Strojimport's customer service department in Moscow, staffed with Czechoslovak and Soviet specialists, sees to it that Soviet users are satisfied. After operating successfully for more than 15 years, the department moved to the Czechoslovak Trade Center in Chertanovo where it is able to further expand its servicing, consulting, technical information and sales activity.

In accordance with the long-term trade agreement between the CSSR and USSR, Strojimport also imports large volumes of machine tools, primarily special and preset machine tools for the Czechoslovak automotive industry.

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CSO: 2400/421

CZECHOSLOVAKIA

APRIL 1985 ECONOMIC RESULTS SUMMARIZED

Prague HOSPODARSKE NOVINY in Czech No 21, 1985 p 2

[Commentary by Engineers Marie Hormannova and Alena Polakova, Federal Statistical Office: "April 1985"]

[Text] Last month's results contributed significantly toward the gradual fulfillment of the annual tasks. The principal indicators' growth has been influenced also by two extra workdays over April of last year. In the period from January through April, the number of workdays was the same as last year.

By the end of April, fulfillment of the annual plan was 33.3 percent for industry's gross output, 28.1 percent for the volume of construction work performed by the construction enterprises' own personnel, 33.2 percent for the procurement of slaughter animals including poultry, and 29.8 percent for public freight transportation.

Industry's gross output in April amounted to 59.1 billion korunas, and the monthly production plans were fulfilled 101.2 percent. The gross output's April index of 111.1 over the same month last year was influenced by the two additional workdays. Average daily output rose by 3.7 percent.

From January through April, gross output rose by 3.7 percent over the same period last year, to 232.7 billion korunas. The enterprises' production plans were fulfilled 100.3 percent during this period. However, more than 30 percent of the industrial enterprises fell short of fulfilling their production plans for the period.

The largest increases in gross output during the first four months of this year have been reported in general engineering, the clothing industry, and in heat and power generation. The electrotechnical industry also attained a high growth rate, but at a shortfall in fulfilling the breakdown of the economic plans.

The economic production plans have been overfulfilled for practically all principal industrial products. During the first four months, 28.664 billion kWh of energy was generated; 9.204 million metric tons of bituminous coal and 35.42 million metric tons of brown coal and lignite were mined.

Basic Indicators of National Economy's Development in April 1985.
Increases Over Comparable 1984 Period (in percent)

	<u>Apr</u>	<u>Jan- Apr</u>	<u>State plan¹</u>
Centrally Administered Industries			
deliveries for:			
- investments, at wholesale prices	.	3.3	.
- domestic trade			
at wholesale prices	.	3.3	.
at retail prices	.	1.2	.
- export to socialist countries			
at wholesale prices	.	5.2	.
at f.o.b. prices	.	5.7	.
- export to nonsocialist countries			
at wholesale prices	.	3.1	.
at f.o.b. prices	.	0.3	.
- other sales for productive consumption and operations, at wholesale prices	.	2.5	.
volume of industrial production	11.1	3.7	2.9
average number of employees	0.7	0.7	0.9
labor productivity based on gross output	10.3	3.0	2.0
Construction			
construction work performed with own personnel	8.9	-3.1	0.7
average number of employees	0.4	0.0	0.6
labor productivity on construction's basic output	8.4	-3.1	0.1
housing units delivered by contracting enterprises	-15.7	-6.5	25.3
Procurement			
slaughter animals (including poultry)	4.0	0.5	-1.1
milk	2.3	-0.5	-2.1
eggs	8.7	3.0	-6.4
Retail Turnover			
main trade systems	8.0	4.2	4.1
Foreign Trade ²			
export to socialist countries	.	-0.8	2.4
export to nonsocialist countries	.	-3.5	-1.9
import from socialist countries	.	5.6	3.9
import from nonsocialist countries	.	4.4	8.9

1. Plan adjusted for actual 1984 results.

2. Data on actual results of the state plan, in accordance with the instructions for 1985 (pursuant to CSSR Government Decree No 308/1984).

Plan fulfillment of adjusted value added was 99.1 percent in industry during the first four months, but more than 30 percent of the enterprises fell short of this indicator in their plans.

The economic plans for deliveries of the industrial output were overfulfilled for January through April to all principal destinations. The highest overfulfillment of the plan during the first four months was achieved in deliveries for investments, and in deliveries for export to socialist countries. Fulfillment of the sales plan by individual enterprises was uneven.

In construction, the volume of construction work performed by the own personnel of the construction enterprises amounted to 8.6 billion korunas in April, an increase of 8.9 percent over the same month of 1984. On the basis of the same number of workdays as last year, however, the volume of construction work performed by the construction enterprises' own personnel was 1 percent lower than in April of last year. April fulfillment of the economic plans for the volume of construction work performed by the construction enterprises' own personnel was 104.4 percent.

In January through April, the volume of construction work performed by the own personnel of the construction enterprises was lower by 3.1 percent than in the same period last year; the state plan for 1985 calls for an increase of 0.7 percent. Fulfillment in this period of the economic plans for the volume of construction work performed by the construction enterprises' own personnel was 95.7 percent. For January through April, 162 construction enterprises (70.1 percent of the total number of such enterprises) fell short of their economic plans for construction work performed by their own personnel. In comparison with the situation that had existed at the end of March, the number of enterprises falling short declined.

Adjusted value added in construction during January-April this year was 1.7 percent lower than in the same period last year, and the construction enterprises fulfilled their plan for adjusted value added 94.9 percent in this period. But 136 construction enterprises, 56.2 percent of the total number, fell short of their economic plans for value added in the first four months of this year.

Labor productivity in construction, based on the volume of construction work in place, increased by 8.4 percent in April, but declined by 3.1 percent for January through April. The annual state plan calls for a 0.1-percent rise.

The contracting enterprises delivered 2,041 housing units in April; this raised the total number of housing units delivered in January through April to 8,906, which is 6.5 percent less than in the same period last year. In terms of the number of housing units delivered, 12.0 percent of the annual plan has been fulfilled during the first four months of this year.

In agriculture, the procurement schedule for basic livestock products was fulfilled 98.9 percent in April (including 98.0 percent for slaughter cattle, and 99.8 percent for slaughter hogs), 105.3 percent in the case of slaughter poultry, 105.1 percent for milk, and 112.9 percent for eggs.

Public freight transportation developed favorably in April. The tonnage hauled was nearly 56 million metric tons, 4.6 percent more than in April of last year. It increased primarily at the CSAD [Czechoslovak State Motor Transportation], by 10.0 percent, and in inland navigation, by 11.3 percent. The railroad

hauled 1.3 percent less freight than a year ago. The April economic plans for public freight transportation were fulfilled 101.6 percent overall. This includes 98.6 percent in rail freight, 103.5 percent at the CSAD, and 124.6 percent in inland navigation. The average daily loading of freight cars was 1.6 percent lower in April than a year earlier; the average turnaround time of a standard freight-car unit increased 4.6 percent.

The freight tonnage hauled by public freight transportation jointly in January through April was 6.2 percent less than in the same period of last year. Within this the decline was 5.8 percent on the railroad, 6.1 percent at the CSAD, and 20.5 percent in inland navigation.

In domestic trade, the rise of the retail turnover in April was influenced by an extra business day over April of last year. The retail turnover of the main trade systems rose in April by 8.0 percent over the same month last year, to a total of 20.4 billion korunas. Sharp increases of the retail turnover in April were reported at department stores (13.9 percent), Jewelry Stores (12.9 percent), Trade in Industrial Goods (10.0 percent), and Food Trade (8.7 percent).

In foreign trade during January through April, import rose faster than export. A higher growth rate than planned for the entire year was achieved during January through April in import from socialist countries. Fulfillment of the annual state plan during the first four months of this year was 29.3 percent for total export (including 29.0 percent for export to socialist countries, and 29.8 percent for export to nonsocialist countries) and 28.3 percent for total import (including 30.6 percent for import from socialist countries, and 23.3 percent for import from nonsocialist countries).

On 30 April 1985, the currency in circulation reached 55.8 billion korunas, in comparison with 54.0 billion a year earlier.

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CSO: 2400/424

CZECHOSLOVAKIA

ECONOMIC DEVELOPMENTS OF 1984 EVALUATED

Prague PLANOVANE HOSPODARSTVI in Czech No 2, 1985 pp 10-16

[Article by Dr Eng Vaclav Cap, Federal Bureau of Statistics, and Dr Karel Rybníkar, State Planning Commission]

[Text] Results achieved in the development of the national economy in 1984 were essentially a continuation of the developments of 1983 and they in turn determined the point of departure for 1985. In evaluating the results achieved, we can point to the following as the common characteristics of both years:

- continuous and well-balanced dynamics of economic development based on intensive growth factors,
- maintaining and further improving the achieved quality of life and social securities of the public,
- reducing demand for raw materials and energy,
- consolidating external economic balance while reducing indebtedness in free currencies,
- intensifying cooperation with the Soviet Union and other socialist countries.

Along with the generally positive developments, however, certain negative tendencies continued, among them the following:

- technological progress and innovating activity by enterprises have not yet become the principal method and factor of intensification,
- national labor productivity falls short of the economy potential,
- technical-economic standards of products in a number of sectors do not meet the quality and requirements needed,
- effectiveness of exports is not increasing at the necessary rate,

--the structure of production is not responding fully in the desired way, especially in case of export requirements to non-socialist countries and to some extent also to socialist countries, to the growing demands of consumers in the domestic market, as well as to high demands for promptness and high technical standards of deliveries for capital construction.

--incomplete and uneven fulfillment of assignments by a number of enterprises and organizations hinders a smooth functioning of the economy.

Even though the main goals of economic policy in 1984 essentially have been met, it appears that in future development it will be necessary to focus attention on the continued growth of the national income by increasing effectiveness and intensification, on improving the quality and enhancing the role of advanced technology and products in reducing energy demands and in conserving metals and raw and processed materials, on implementing the desired structural changes, on securing effective foreign exchange, as well as on a rational and timely capital construction and improved quality in the domestic market.

Dynamics, Intensification, and Proportionality in the Economy

Results achieved in the development of the national economy in 1984 contributed significantly toward fulfilling the tasks of the Seventh 5-Year Plan. The dynamics of the development of the national economy last year reached their highest level of the 80's. Following a temporary and intentional slowdown in 1981 and 1982, designed primarily to ensure the adaptation of the economy to a lower and non-increasing inflow of energy and raw and processed materials, the dynamics of development have revived in 1983 and 1984. This is documented by the gross national income (in percentages compared to the previous years): In 1981 it was 0.8 percent higher, in 1982 0.6 percent higher, in 1983 2.7 percent higher, and in 1984 by an estimated 3.2 percent. Altogether the gross national income grew by 7.5 percent in four years. A significant contribution to the dynamics of development last year was made by the implementation of resolutions adopted at the 10th Plenum of the CPCZ Central Committee for the purpose of making the projects of the state plan more progressive, and by establishing goal-oriented tasks for exceeding the qualitative indicators of the plan.

The increase in dynamics was realized thanks to the growth of national labor productivity. However, instead of an increase in the gross national income, projected in the directives for 1981-1982 at 90-95 percent, only 85 percent were achieved in 1984, and during the 4 years only about 70-75 percent. The national labor productivity in the first 2 years of the Seventh 5-Year Plan, while full employment was maintained, stagnated and increased only in 1983 and 1984. It was higher in 1980, as measured by the gross national income, by 5.4 percent. Nor are intensification projects to promote economic growth being fully implemented. The over-all demand for materials remains high, even though the consumption of some basic kinds of raw materials and fuels declined. The demand for energy needed to produce the gross national income was estimated to be roughly 6.5 percent lower in 1984 in comparison to 1980, which means that given the same demand for energy as existed in 1980, the national economy would need during 1981-1984 an average of 1.7 million tons of

standard fuel more per annum. The requirements of the national income for consumption of ferrous metals were estimated to have declined by almost 10 percent during the four years, and that represents a relative saving of 1.3 million tons. The efficiency of fixed assets showed unfavorable development and poor standards. The decline in their efficiency has abated, but even at that it was more than 10-12 percent lower in 1984 compared to 1980. This was caused by underutilization of machinery and equipment including a generally low level of shift work rate, as well as by a slow liquidation rate of obsolete fixed assets.

One of the successes of economic development in the early 80's has been to maintain and intensify the balance and continuity in basic macroeconomic relationships. A planned harmony was achieved between the formation and consumption of the national income while creating an active balance for foreign trade, which enabled us to lower significantly the indebtedness in free currencies. In 1984, the national income consumed was, as was the case during the past three years, lower than what was produced. The volume of investments was slightly higher in 1984 than in 1983, but it remains lower than in 1980.

The reduction in the amount of resources designated for home consumption was not reflected, in accordance with the guidelines of the directives of the 16th Congress of the CPCZ, in a lower standard of living but in capital accumulation. Non-productive consumption, personal as well as public, has increased even faster than indicated by the Seventh 5-Year Plan.

In spite of these tendencies in the formation and use of the national income, a number of difficult problems remain to be solved during the coming years. First of all, there is the requirement to achieve a significantly more effective use of foreign exchange; further, it will be necessary to ensure a far higher quality for the domestic market and its necessary structure, including a wider variety of products. In the case of material public consumption it will be necessary to achieve a higher utilization and efficiency of resources which are invested in this area. The most complicated tasks will have to be resolved in the area of capital accumulation. The economy continues to have consistently high inventories, and special attention also has to be given to capital investment. After lowering the rate of investments, and considering the need to maintain, or even increase, investments for fuel and energy resources, especially for nuclear power plants and certain other sectors, a far more limited volume of investments remains available for other producing and non-producing sectors. To ensure a broader replacement process of the national economy demands, therefore, to ensure conceptually the effectiveness of investments and their optimal structure.

Development of Resources

In comparison with the first half of the 5-year plan, the creation of resources in industry, agriculture and construction rose significantly. In industry, one of the most important successes of the early 80's was to provide for a continuous and balanced development of production, and an over-all resolution of the most serious bottle-necks in the replacement process. We succeeded in implementing the main development projects of the Seventh 5-Year

Plan. After a moderating growth during the first 2 years of the 5-year plan, influenced by a lower inflow of imported fuels and raw materials, the dynamics increased during the following 2 years. The industrial output of centrally planned industries increased by 2.2 percent in 1981 compared to the previous year, 1.2 percent in 1982, 3 percent in 1983, and 4.0 percent in 1984. In the 4 years industrial output was 10.8 percent higher.

The principal challenge of industrial production, together with securing the inflow of raw and processed materials, became, to a much greater degree than before, to ensure efficient utilization of production.

Generally we succeeded in implementing the programs of the state plan, but within the structure they were not realized by individual industry branches to a large enough extent for an economy of profitable deliveries. The effectiveness of foreign trade declined, and in spite of a better variety in the range of deliveries for the domestic market, goods offered are only slowly responding to the requirements of the consumers.

One of the most important tasks for the 80's is to guarantee a continuous supply of fuel and energy to the national economy and the public. The state goal-oriented program, designed to lower energy demands of the economy, contributed significantly to the savings achieved. We managed to keep the total consumption of fuel and energy resources in 1984 at a level of 104 million tons of standard fuel equivalent. Achieving the demand task in the area of fuel conservation requires, however, that we exert ourselves more than ever in order to implement the resolutions adopted during the first stage of the nation-wide review of fuel and energy management, and to reveal reserves which exist in this area.

The share of imported fuel and energy sources in the total consumption declined from 38 percent in 1980 roughly by 1.5 points. The reduction in the imports of fuel and energy resources understandably led to a continuing pressure to develop coal production, increase the production of electricity in nuclear power plants, and above all to make more efficient use of fuels and energy. Total output of coal reached 129 million tons in 1984, and thus was nearly 5 percent higher than in 1980. Output of electricity reached 78.3 billion kilowatts, an increase of 7.7 percent over 1980. The share of electricity generated in nuclear power plants in 1980 amounted to 6.2 percent of the total output, in 1984 to 9.2 percent. Contrary to the original plan, however, there was a shortfall in the production of nuclear electricity due to delays in the construction of nuclear power plants.

The rate of growth in the output of the machine tool industry, especially the electrical equipment industry, was faster in 1984 than industrial output generally. Together with faster growth in the aforementioned branches, the process of structural changes was accelerated by a planned slowdown of production in energy, raw materials, and import intensive branches, that is in metallurgy, the chemical industry, and production of building materials. The deceleration of the dynamics in those branches with the exception of building materials did not, however, proceed to the extent planned. In metallurgy this happened primarily because of demands for exports of metallurgical products, in the

chemical industry partly because of a change-over to a range of products with a higher valorization of the basic raw materials.

In the machine tool industry the significant structural changes were supported by state goal-oriented programs, which showed the greatest increases, particularly in the area of electrical equipment. The total output of these goal-oriented programs increased more than twice in 1984 in comparison with 1980 according to estimates; this is true mainly of the production of industrial robots and manipulators, electrical equipment, technical equipment for computerized systems of management of technological processes, hydraulic elements and aggregates, and production semiconductor transformers and parts. Nevertheless, the planned volume of output in some of the state goal-oriented programs is not being fully realized. In the machine tool industry, as a result of the state goal-oriented program designed to conserve metals, we succeeded in lowering the marginal use of metals by roughly one-fifth compared to 1980, as measured by gross production.

In the chemical industry production in 1984 rose by 3.4 percent in comparison to 1983, therefore faster than projected in the state plan. The long-time trend toward higher grade refinement of raw material resources began to show in a lower production of fuel and heating oil; on the other hand, an increase was achieved in the production of plastics, synthetic fibers, paints and organic dyes. At the same time, development of small-scale chemical industry began to be emphasized. As far as consumption of fuels is concerned, it is still necessary to make special effort to make the use of motor oil, gasoline, and heating oil more efficient, and thus continue what we started in previous years when consumption of fuels declined while transportation needs were met and transportation output increased.

In the woodworking industry production rose 4.3 percent in 1984. In accordance with plans this sector showed a significant increase in output in 1981-84, but the planned level was not reached. This was caused mostly by delays in putting new production capacity in operation, by failure to reach projected parameters, and in some sectors by difficulties in marketing.

In the textile industry, production rose by 1.8 percent in 1984 as compared to 1983, in the garment industry by 3 percent, in the leather and footwear industry by 2.2 percent, in the glass, china, and ceramics industry by 3.8 percent, and in the printing industry by 3.7 percent. The increase in output projected by the plan was achieved. In the light industry, emphasis has been gradually shifting to better quality, improvement in the assortment of consumer goods, enrichment of the market with novelties, increased share of superior quality goods, and removing unsatisfactory kinds of products. Concurrently the number of work assignments for export increased.

Production in the construction industry rose by 1.7 percent in 1984 in comparison to 1983. The 5-year plan for construction calls for a consistent orientation toward completing construction projects, shortening construction time, and improving the quality and efficiency of construction. Because of the differentiated restrictions on capital construction according to branches and sectors, the over-riding consideration is to adapt construction capacity to construction

requirements. That includes concentrating construction capacity in areas with preferential capital investment, and a faster development of construction capacities for the needs of reconstruction, modernization, and repairs. In the areas of concentrated capital investment in Prague and Bratislava, the construction industry attained the volume planned; however, in the Northern Bohemia region this was not the case.

Gross agricultural production increased an estimated 3.6 percent in comparison with 1983, crop production growing faster than livestock production. This was primarily due to a harvest of 12 million tons of grains, which was 1 million tons more than in 1983. Contrary to the plan, livestock production also rose significantly, even including pigs, poultry, and eggs, all of which require a great amount of grain feed. The successful harvest of 1984 must be put to use not only optimally in feeding livestock, but also to form stockpiles of fodder in the centers and agricultural enterprises. During the 4 years the 5-year plan was surpassed not only as a whole, but also separately in crop output and livestock output.

The share of crop output reached 43.2 percent of the gross agricultural production in 1984 compared to 42 percent in 1980. On the average, 10.7 million tons of crop were harvested during the four years (the 5-year plan projected 11 million tons). The average yield per hectare in 1981-1984 reached 4.21 tons. Livestock production was being developed in such a way so as to depend more on domestic sources of fodder. Therefore, the increase in livestock production was based on developing cattle breeding and better utilization of livestock. The number of cattle was estimated to be higher, the number of pigs lower, in 1984 than in 1980. Further, the average output of milk and eggs increased, and breeding of young animals improved.

Along with meeting and exceeding the planned purchases of main crop products (excluding sugar beet), purchases of livestock products were exceeded in 1984 as well. In 1984, additional 69,000 tons of meat on the hoof and live poultry, 218 million litres of milk, and 121 million eggs were purchased in 1984 in comparison with 1983. These purchase overruns were reflected in increased output of the food processing industry, which was 3.2 percent higher in 1984 than in 1983. The food processing industry is increasingly giving higher priority to getting better value from agricultural raw materials, providing the domestic market with a wider range of products, and improving quality.

The transportation sector met all transportation requirements in 1984. Within the transportation structure the share of railway and, to a certain extent, river transportation grew to the detriment of road transportation. Shipping requirements of the national product, measured by tons per kilometer, declined between 1980 and 1984 only less than 3 percent. Public freight transportation carried more than 660 million tons of goods in 1984. Altogether, 1.5 percent more goods were shipped than in 1980.

Technological Development

The year 1984 saw a further increase in the share of innovative products and of the share in value of technically advanced products in the total goods

output. Thus the trend of past years continued. In spite of the extraordinary attention and effort given by management to technological development, this determining factor for intensifying the economy falls short of the requirements it is expected to meet. Results, which our national economy needs under the present world conditions, are still far from being achieved. Certain positive results are still not satisfactory enough from the standpoint of total needs, considering the relatively sizeable technological base, and considering the potential in international cooperation with countries of the Council of Economic Mutual Aid.

During the past four years, the volume of production of new products grew rapidly. In 1980 it amounted to 12.6 percent of the total production of goods, in 1984 almost 19 percent. The share in value of technically advanced products in the total production of goods of industrial sectors also increased, from 9.4 to more than 13 percent.

Realization of state goal-oriented programs is an important tool for increasing the technical level of production. In 1984 as well as in previous years, state goal-oriented programs directed predominantly toward production were essentially fulfilled. The share of production of state goal-oriented programs in the machine tool category reached more than 8 percent of the total machine tool industry production, that of electrical equipment, or rather electronics, as much as 30 percent of the electric equipment industry production. The share of selected chemical products in the framework of the state goal-oriented program (qualitative chemistry) exceeded 4.5 percent of the total chemical industry output.

However, there still remains the task of accelerating the process of research-production-use, of rapidly increasing the technical level of production, of reducing the diffusion of technological development given by the wide range of products, and making better use of international socialist cooperation in this area.

Capital Construction

The volume of capital investment projects in 1984 reached Kcs 147.9 billion. The total volume basically corresponds to planned projections, but the structure of capital investment remains a persistent problem.

A significant trend of capital investment policy was the lowering of the rate of investments (calculated by the volume of investments for the gross national product), which decreased from 30.5 percent in 1980 to less than 18 percent in 1984.

In compliance with plans to make the carrying out of capital investment more effective, construction start-ups were limited, which led to a lower number of constructions in progress. In spite of that, the dispersion of the construction capacities is considerable, as is borne out also by the average construction time. Although that declined from 4.6 years (in 1980) to just under 4 years at the present time, it remains excessively long. The number of constructions in progress with outlays of more than 2 million Kcs excluding comprehensive

residential construction (state plan measures) declined from 5,292 constructions to 4,150. Although we have been gradually concentrating construction and assembly capacity on key constructions and on completing mandated constructions, the final results are still not up to expectations. We are succeeding in putting into operation on time only four-fifths of the capacity designated as key project.

Foreign Trade

According to the blueprint for 1984--to basically achieve equilibrium in the balance of payments with socialist countries and consistently follow the course of gradually restoring equilibrium in the area of foreign trade with socialist countries--the plan was increased by more than 12 percent compared with 1983 (calculated in current price inclusive of VRCV), growing even faster in case of the Soviet Union. Results achieved in foreign trade confirm that cooperation with CEMA member countries is intensifying. Trade with these countries has a significantly stabilizing effect on a smooth functioning of the Czechoslovak economy.

In trade with non-socialist countries exports rose by almost 4 percent, and continued to require frugal expenditures of foreign currencies on imports. To increase the export potential of the Czechoslovak economy and the efficacy of foreign trade exchange, it will be necessary to expedite the adaptation of a number of manufacturing sectors to the demanding conditions on the foreign markets.

Standard of Living

The accelerating dynamics of resource development showed up in a faster growth in the standard of living. Personal consumption rose by 1.6 percent in comparison with 1983, per capita income increased by 2.6 percent, public consumption by 5 percent. Increase in the price of beverages at the end of 1984 did not have a significant effect on the cost of living, since from 1985 it has been off-set to a considerable degree by social benefits.

In 1981-84 the standard of living of the people grew. The per capita income was roughly 5 percent higher in 1984 than in 1980. While nominal wage increases rose by roughly 13 percent, cost of living rose by less than 8 percent. Social benefits through adjustments in pensions and child allowances rose faster than compensation for work. An average wage rose a little more than 7.5 percent.

The situation on the domestic market was stabilized. However, despite a better supply of goods for the domestic market--turnover in retail increased about 12 percent in four years in current prices--we did not succeed in meeting fully the demand for certain products. Supply of foodstuffs improved significantly. In the service sector the number of workrooms and collection centres increased, certain services became available on Saturdays and in the evenings more often, but the scope of services anticipated by the plan was not achieved.

Expenditures for medical services and schooling continued to rise. The day care center capacity, kindergarten, and school food programs rose in accordance with planned projections. Significant progress was made in the gradual reconstruction of the Czechoslovak educational system. Material conditions for providing health care services were expanded. In 1981 to 1984 roughly 385,000 apartments were built. Deficiencies persisted, however, in modern conveniences and public facilities of the residences; the apartments were only finished during the last few months of the year. Neither did the modernization of apartments proceed according to plan.

The implementation of the 5-year plan to date, including the plan for 1984, created preconditions for a successful implementation of the total Seventh 5-Year Plan, and in many ways for surpassing it. A determining factor for a continued successful development of the national economy remains a vigorous intensification, leading to high efficiency and quality of all work.

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CSO: 2400/390

CZECHOSLOVAKIA

STRUCTURAL CHANGES OF ENERGY INDUSTRY DISCUSSED

Prague PLANOVANE HOSPODARSTVI in Czech No 2, 1985 p 17-23

[Article by Eng Josef Petru, State Planning Commission: "Development of Structural Changes in the Fuel and Energy Balance"]

[Text] The conceptual framework of the long-range course of development of the national economy is acquiring a concrete form at the present time. Similarly, in the area of fuel and energy balance, precepts of economic development are being formulated which differ in many respects from developments to date.

During the era of low prices, imports of liquid and gaseous fuels basically covered the increases in domestic consumption of primary energy sources, as is shown by the following data (in millions of tons of standard fuel):

	<u>1960</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>
Consumption of primary energy sources in CSSR	56.9	71.9	81.2	93.2	103.2
Increase in domestic consumption	--	15.0	9.3	12.0	10.0
Imports of crude oil and natural gas	--	5.1	6.8	11.1	8.9
Increase in imports of crude oil and natural gas in the increase of total domestic consumption of primary energy (in percent)	--	34.0	73.1	92.5	89.0

In the 70's, however, there was a considerable increase in the prices of fuel and energy on the world markets, which had a significant impact on developments in the area of fuel and energy balance of most countries. The biggest increases occurred in prices of crude oil and petroleum products, as is evident from the following comparison of price movements which took place in European capitalist markets (in U.S. dollars per barrel of crude oil energy equivalent):

	<u>Crude Oil</u>	<u>Increase in Percent</u>	<u>Natural Gas</u>	<u>Percent</u>	<u>Coal</u>	<u>Percent</u>
1970	2	100	2.25	100	3.6	100
1975	11.8	590	5.85	260	12.15	338
1980	32.5	1,625	23.91	1,063	13.13	364

Individual countries searched for solutions in this situation, particularly by using their own resources and by better utilization of primary energy in the entire replacement process. Not even Czechoslovakia could remain an exception in this respect, all the more because it belongs among those countries whose energy base can be characterized as non-comprehensive and inadequate.

The share of fuel and energy imports in the total domestic consumption kept increasing (in percent):

<u>1960</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1985</u>
10.9	18.7	25.7	34.1	37.8

It is also evident from these data that after 1975 the rate of increase of that share declined. While the consumption of fuel and energy remained practically unchanged, the Czechoslovak economy, apart from intensifying the process of improving the efficiency of use, took the course of increasing the utilization of domestic sources of fuel. During 1973-1983 the output of brown coal and lignite alone increased by nearly 20 million tons a year. This increase occurred mainly in our brown coal districts SHD and HDBS, of course at the price of a negative impact on conceptual solutions, while also not fulfilling the projected parameters of machine technology.

Another consequence of an accelerated coal output is that, concurrently with delays in the construction of certain new mining capacities, coal reserves of capacities, which are nearing the end of their useful life, are becoming exhausted at a faster rate. At the same time, coal mining is being shifted to localities with even worse geological conditions and coal of lesser quality.

Last but not least, the growing use of solid fuels in our fuel and energy balance projects itself into a worsening environment, not only in the areas where they are mined, but also in localities where they are being used. This concerns mainly users under the jurisdiction of the departments of the Ministry of Fuel and Energy, where roughly three-fourths of the increase of brown coal output is being directed.

In 1984 the output of brown coal reached its peak, and, with respect to the mentioned reasons, will be regulated in the future; already this year it is to fall below 100 million tons. Further reduction of brown coal output and consumption in Czechoslovakia will depend on how quickly the program will progress on planning and construction of nuclear power plants, which are to gradually

replace capacities for burning fossil fuel, together with a conversion of some of these steam power plants to a heat producing operation.

The investment demands of the nuclear program are, like those of ensuring the mining of fuels, considerable and growing all the time. In this situation it is necessary to underscore once again the significance of the maximum utilization of fuel and energy input by the national economy as the most effective way to bring about further development.

The decisive approach to solving our fuel and energy problems under the given circumstances is to permanently and significantly reduce energy demands. An analysis shows that in comparison with other developed countries our replacement process still has a high input of energy, materials, and capital. In per capita energy consumption, the following countries show, in comparison with CSSR, these values: Bulgarian People's Republic--86, Hungarian People's Republic--57, German Democratic Republic--110, Polish People's Republic--86, USSR--86, Belgium--93, Austria--65, Sweden--82, France--68, Italy--51, German Federal Republic--89, U.S.A.--165.

Even though we cannot draw definite conclusions from merely the above data, it remains a fact that CSSR belongs among countries with the highest energy demands. Moreover, after 1970 those indicators did not evolve to Czechoslovakia's advantage in mutual relationships to other countries, even though energy demands for the creation of the national income declined in the years 1970 to 1980 by 55 tons of standard fuel/million Kcs.

The analysis of developments to date also has been used as a point of departure when preparing the long-range conceptual framework for future development of Czechoslovak economy. The fuel and energy policy for the near future, i.e., for the years 1985 to 1990, comprises the following precepts:

1. Significant increase of effectiveness in the utilization of fuel and energy in all branches of the national economy relative to achieved outputs, even in the non-productive sphere; by implementing program SCP 02 "Making the process of consumption and utilization of fuel and energy more efficient" it should be possible to save by the year 1990 about 14 million tons of standard fuel, together with at least an additional 3 million tons of standard fuel attributable to structural changes in the national economy; marginal consumption of primary energy sources per unit of produced gross national income is to decrease by more than 2.1 percent a year (during the Seventh 5-Year Plan by 1.8 percent).

2. Gradual changes in the structure of resources and consumption of individual energy providers, including:

- orientation toward a rapid development of nuclear power plants, the realization of which is contingent upon removal of present deficiencies which are slowing down construction;

- reducing consumption of liquid fuels (heating oils) in stationary power plants and replacing them by other energy providers, because we are talking

about the most expensive and most difficult to obtain fuels, which at the same time do not solve the problems of the environment;

--increase in the consumption of natural gas, which will be covered mostly by imports from the USSR; this is intended to gradually limit the consumption of gas and to replace liquid fuels;

--limiting domestic coal production with respect to its natural reserves, utility value, and conditions and outlays connected with its procurement;

--reducing the consumption of brown coal for generating electricity in connection with the development of the nuclear power systems, and strengthening its role as a fuel base for producing heat;

--growing role of electricity in our fuel and energy balance, while further development of its use within branches has to be based on calculations and reasons for its most effective and advantageous use.

3. Substantially heightened attention to the environment; toward this end, provisions will be made in the Eighth 5-Year Plan, in accordance with new scientific information and technology, for creating conditions conducive to bringing about a halt to the increase, and, in the Ninth 5-Year Plan, a decline of emissions of solid and gaseous matter into the atmosphere.

These basic concepts of our long-range fuel and energy policy were incorporated into the balance of fuel and energy proposal, and approved as directive for the preparation of the Eighth 5-Year Plan.

The concept of the long-range program of fuel and energy development endeavors to apply vigorously, within the conditions for reducing the energy demands of the national economy, the precepts of economic policy contained in the general directives established by the 16th Congress of the Czechoslovak Communist Party.

Under the current domestic, and particularly the complex foreign, conditions, the main substance of our economic policy is to steer the economy toward a realistic course of intensive and structural changes, great frugality and proper valuation of all sources of fuel, raw materials, and energy.

In the planned long-range energy demands of the Czechoslovak national income (ton of standard fuel/million Kcs) we are projecting these developments:

<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>
227	204	188	166	147

In the increase of outlays for domestic consumption (Kcs/ton of standard fuel) we are anticipating these costs:

<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>
286	420	776	887	1,087

Of key importance in resolving these problems is a goal-oriented preparatory work for realizing the changes in the branch structure of our national economy, particularly in industry, increasing the technical-economic level of the replacement process, guaranteeing overall savings of materials, ensuring higher effectiveness in the international exchange of products, and above all for changes in the structure of our fuel and energy balance, where it is essential to lower the share of coal, most of all brown coal, develop nuclear energy power plants, while keeping the total volume of other high grade fuels constant.

We began to follow this course of action already during the Seventh 5-Year Plan. This is borne out by the domestic consumption of fuel and energy, which is being maintained below the level of planned indicators.

An analysis of potential resources and effective use of fuels and energy shows, that in the initial year of each of the future 5-year plans, it will be possible to assume roughly the following development of the structure of basic resources for domestic consumption (in percent):

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Solid fuels	71.6	69.0	63.4	57.6	52.0
Gaseous fuels	10.1	12.5	16.96	17.9	20.2
Liquid fuels	13.8	10.14	6.24	5.2	3.7
Primary electricity	4.2	6.7	11.6	17.1	20.6

The reduction of resources of solid fuels is commensurate with possibilities which are limited by the given situation in mining, growth of marginal costs, a need for lower output, and, on the other hand, with a realistic assessment of increases in the output of electricity generated by nuclear power plants. Nevertheless, coal remains our principal determining source of energy and its share in the year 2000 will still slightly exceed half of all the sources which are to be used in domestic consumption. From these facts emerges the task of further reducing unfavorable consequences which stem from our present structure of primary energy sources with a large share of coal. CSSR today belongs, together with the German Democratic Republic and Polish People's Republic, to those countries which have the largest share of coal in their fuel consumption. At the same time a further disadvantage is the fact that in the structure of Czechoslovak brown coal the predominant kinds are those with a low caloric value and a high volume of impurities and ash residue, which have a far lower energy efficiency in their end use than high-grade fuels.

The principal changes therefore will take place in the development of brown coal mines, where, contrary to the original concept, which presupposed stagnation of long-term mining at the level of 95 million tons a year, the following development is planned (in million tons):

<u>1980</u>	<u>1983</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
94.9	100	99.3	93-95	86-89	80-82

In connection with this concept the following changes should take place in the structure of generating electricity after the year 1985 (in billions of kilowatt-hours):

	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Total sources	82.3	91.3	100	110
Those of the Federal Ministry of Fuel and Energy				
Steam power plants	53.8	45.1	36.3	30.2
Nuclear power plants	10.5	25.0	41.0	56.0
Hydroelectric plants	4.0	5.2	8.0	9.0

These changes will have a positive impact on the total balance of basic resources, so that the above mentioned plan--to increase the efficacy of the changes in the power industry and stop the deterioration of the environment--can be fulfilled. A decline is taking place in the consumption of brown coal by what represents a production of roughly 4 medium sized coal mines with an investment outlay of about 20 billion Kcs. According to reports about consumption of brown coal and lignite in the fuel and energy branch the production of sulphur dioxide is thus being reduced accordingly (kilotons/year):

<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
1,750	1,880	1,784	1,619	1,525

If we add up the differences in production of sulphur dioxide from coal and heating oils between 1990 and 1985, we can assess its decline to be more than 200,000 tons a year. Yearly savings resulting from the protection of the environment as a consequence of lower sulphur dioxide emissions by the above amounts represents about 140 million Kcs. The need for brown coal and lignite is therefore influenced to a considerable degree by the structure of production of electric energy. This is evidenced by the consequences of the shortfall in the production of electricity by nuclear power plants (as against projections of the CSSR government) this year. Steam power plants and coal mines are working today on the marginal line of production and economic profitability. What is at stake is to make this period of "tension" temporary and as brief as possible.

Toward the end of the Seventh and beginning of the Eighth 5-Year Plan some coal capacities in the Northern Bohemia districts were becoming obsolete, without provisions for their full replacement having been made, mainly by depending more on an increasing output of electricity from nuclear power plants.

Therefore the basic premise will have to be realism and consistency in gaining increases in electricity output from nuclear power plants in such a way that in the year 2000 they amount to 45 billion kilowatts at a minimum, and from hydroelectric power plants to 5 billion kilowatts. Only thus can we guarantee a 40 percent reduction in electricity output based on fossil fuels, and the necessary increase in resources and consumption for the projected development of the national economy. To realize the above structural changes, it will be necessary to ensure in the production balance in the year 2000 and output of about 10,000 megawatts. Nevertheless, in the production resources of Czechoslovak power plants--in comparison to recommended norms of the CEMA methodology--a certain portion could be lacking. That points to the necessity to fully ensure construction of nuclear plants, or to depend until that time on certain unused capacities in the steam power plants and the mining of brown coal.

In conjunction with the basic concepts, especially from the standpoint of the value potential of investments, it will be necessary to review constantly the progress of constructions and to manage them in such a way that risks of delays are minimized. Even so, comparing the original objectives (1981) with the reality of the Seventh 5-Year Plan, it should be recognized that, as a consequence of delays in putting individual blocks of nuclear power systems into operation, we used about 10 million tons more coal (we are estimating the same excess amount in the 5-year period of 1986-1990).

It is essential to organize the planning and construction of nuclear power plants in such a way that the deadlines for putting into operation individual blocks in Bohunice, Dukovany, Mochovce, and Temelin are met, even shortened, and production costs are not increased but, on the contrary, lowered. Furthermore, it will be necessary to:

--take advantage of the improving situation in the surface mines of the Krusne Hory districts, in order to ensure, above all, a steady operation and planned deliveries for the national economy by a higher readiness of coal stockpiles, while at the same time minimizing investment costs per ton of mined coal, and to provide for the necessary level of stockpiles.

--review the idea of transforming condensor operated power plants into central heating operations, primarily in relation to production balance and the possibilities of securing their fuel base.

Distributing the marketable output of coal and lignite according to grade indicates their continuing important use in the national economy other than in the power plants under the jurisdiction of the Federal Ministry of Fuel and Energy. Besides exports, about 16 million tons a year of graded kinds of fuel are supplied to the domestic market and 22-23 million tons to other industries. Open to question is its optimal use especially from the standpoint of the technical adaptation of its users, future deterioration in quality (the share of single use kinds of coal will rise), and the elimination of negative effects which result from this fact. There is justification in being concerned that in the meantime industry is not being technically equipped for this future decline in quality, particularly for the growing role of the single use kinds of coal. However, we cannot count with the possibility of moving mining operations to

regions which possess coal of better quality, because following the exhaustion of mines with a relatively better quality of raw materials, in operation remain capacities designed years ago and today concentrated, with limited quality and structure of unused coal resources.

The conceptual framework is therefore predetermined by the construction of these capacities and until the year 2000 we should not (unless need for extraordinary solutions requires it) make decisions about constructing new mines on virgin territory, other than those which today are the objects of experimentation. Of great importance, therefore, is a careful distribution and use of investments within the framework of apportioned assets, especially in case of those areas where a delay in starting, possibly the cancellation, of some constructions might disrupt a plan in progress and lead to a decline in output, or severely affect the structure of the quality of deliveries. It will be quite necessary, however, to give serious consideration to those areas, where, owing to a declining flow of production, they can be postponed. At the same time we should continue to monitor our dependence on long-time buyers, their needs and productive life, and relative to a predetermined strategy, assess in all respects the effects of further tying up our coal stockpiles in pillars under cities, communications and production capacities. It is necessary to consider these facts in all their ramifications, especially with respect to the demanding conceptual decision that will have to be made in the area of nuclear power plant construction. However, before these assume the preponderant part of the electricity generating output, we have to invest in replacement mining capacities for those which have become exhausted. Here, more than ever, it is necessary to think through thoroughly the connection economy-investment-production as a whole, because a consequence of declining output of coal requiring a relatively low investment costs could lead to an over-all loss in the coal industry. We shall no longer be able to compensate for eventual losses of electric energy from the planned output of nuclear power plants, caused by potential short-falls in such demanding investments, by raising domestic output in time of needs, while at the same time heat producing plants, which are in operation today, may not be being optimally utilized.

What we are talking about, therefore, is a whole complicated structure of mutually interdependent demanding measures, which need to be worked out and considered for their potential impact on reducing the high demands of the national economy, in future proposals for long-range course of action, the Eighth 5-Year Plan, the yearly plans, in the total economic and research and development sphere.

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CSO: 2400/390

CZECHOSLOVAKIA

SITUATION IN AGRICULTURE SUMMARIZED

Prague HOSPODARSKE NOVINY in Czech No 19, 1985 p 2

[Article by Eng Zdenek Hoffman, deputy chairman of CPCZ Central Committee department]

[Text] The progress that has been made in plant production is without a doubt one of the most positive aspects of the development of agriculture during the Seventh 5-Year Plan. Grain production remains a key task for this year as well, even though the projected harvest of 11 million tons, when compared with last year's performance, may seem a less rigorous objective and fulfillable without problems. One should keep in mind, however, that the target for this year is roughly 350,000 tons above the average for the first 4 years of the current 5-year plan, which included last year's record harvest of 12 million tons. It should also be kept in mind that 1984 was an exceptionally favorable one for grain production. In addition to the efforts of the farmers other objective factors contributed to the high per hectare yields. These included optimal weather at the end of the vegetative period when the grains were ripening, a situation which continued through the harvest in more areas, with the mountain areas the exception, thus making it possible to keep losses to a minimum.

So far the situation appears favorable for this year's harvest as well. Despite exceptionally cold weather, the stands of winter grains came through the winter in good shape, and harvest prospects are currently very good. A minimum amount of plowing under had to be done, less than the average of recent years, meaning that the planned areas sown in winter grains, and especially wheat (which exerts the greatest influence on per hectare yields) will be maintained. The sowing of spring crops was also completed mostly on time, after initial delays. This was accomplished primarily thanks to a heavy commitment of equipment to this task, with the result that at this moment the spring crops appear to be in good shape. The ultimate success of the spring crop, at last year's experience confirmed, will depend on the moisture available to the plants now, in May, and the weather conditions at the time of ripening and harvest.

The production plan for legumes, which are an important component of the execution of the grain program, also appears to be realistic. It

is turning out that these crops can make a more significant contribution than first anticipated as supplementary components of fodder mixtures. The sowing of these crops was also completed in a timely manner, and the planned area to be sown was exceeded. It is important to note that the area sown in improved types of peas was increased. Yields in excess of 4 tons per hectare may be expected from these types of peas. The production and procurement targets for oil plants remains at the same level as last year; favorable conditions for meeting this objective were created by the fall sowing and unexpectedly good wintering over of winter rape. With the exception of the East Slovak Kraj, there was no major plowing under of these crops either. On the whole a favorable situation has also developed for the assurance of bulk fodders. In contrast to previous years, stands of perennial fodders are in good shape, and their vegetative development so far indicates that their harvest can probably begin on time, which will have a positive impact on their further development and on this year's overall production.

Potato planting is also winding up at the present time. The area to be sown, the care that agricultural enterprises devote to this task, and the quality of the sets combine to create the preconditions for the successful assurance of requirements for both consumption and industrial processing. All things considered, it looks as though it will again be a bigger problem this year to meet customer requirements for potato quality than to meet the target for the harvest. The availability of resources for the fight against diseases will remain tight this year, in part because we are largely dependent on imports from nonsocialist countries for the necessary items. This makes it all the more pressing for agricultural enterprises and service organizations to manage the available resources well, to use them efficiently and only in those situations when it is absolutely necessary. The quality of cultivating work must also increase.

A major objective this year is to achieve a turnaround in sugar beet production, and to do all that is possible to reduce shortages that arise in their production and procurement. It should be noted that a majority of beet producing enterprises have taken an assertive posture to this task. This became evident during discussions of this year's plan at united agricultural cooperative [JZD] member meetings and at state farm conferences, at production conferences of work collectives in plant production, during the specification of socialist commitments and, last but not least, in preparations for and the conduct of spring field work. Initial delays in the planting of sugar beets were compensated for by heavy commitments of equipment and longer shifts; in the CSR the planting was completed ahead of last year's.

The planned area of 209,000 hectares was adhered to for practical purposes. However this is only the first step. To meet the planned production target of 7.8 million tons it will be necessary to achieve an average per hectare yield of 37 tons, which is 3 tons per hectare higher than the average for 1981 through 1984. Farmers therefore must focus their efforts on additional husbandry work, above all cultivation

and chemical measures against weeds. The first priority must be to thin the beet seedlings at the proper time in their growing cycle, which now is as soon as possible, but also to do so in a quality manner. This task is the more difficult because this year again only a portion of the area sown in sugar beets--about 60 percent--has been planted with genetically monocotyledonous seeds, meaning that a considerable amount of manual labor will be involved.

Many agricultural enterprises, therefore, will not get by without brigade assistance. Priority should be given to groups of citizens from places where most of them would have at least some familiarity with agricultural work, and therefore the capability to execute this task correctly. Second priority should go to large brigades from factories. It is anticipated that the role of organizer of these brigades will be fulfilled by national committees and public organizations. The fertilizing of the sugar beets, and especially the use of nitrogen fertilizers, should be approached very carefully. It must be kept in mind that we grow sugar beets for their sugar and that their sugar content is at least as important as the per hectare yield. Senior managers and agronomists in particular should be aware that, under the new way of paying for procured beets, it is in the economic interest of their enterprises to increase the sugar content of the beets they raise.

A second crop of great importance to the national economy which merits particular attention and in the production of which our farmers have fallen behind, is hops. Here as well a positive first step has been taken with the successful completion of spring work in the hop fields. This work is just finishing up, thanks to the effective help of brigades from schools. In addition to providing quality care for the hop vines and, of course, preparing for the harvest in a timely manner, hop raisers face a specific task this year--the renovation of excessively old hop fields amounting to some 500 hectares, as well as the acceleration, in terms of the 5-year plan, of the planting of new hop fields, a task in which they are currently behind planned projections. Nor should one underestimate other tasks in plant production, especially in vegetable production, which is supposed to increase in comparison with last year's plan and related to which problems can be anticipated in the composition of what is produced.

The situation in fruit is unclear at present, except that the plan for production and procurement is also higher than last year's. We can currently expect a good harvest of apples and other common varieties. A question remains concerning the harvests of the much demanded apricots and peaches. Although the damage from the cold this winter was not as serious as had been anticipated, the cool weather in late April and early May also had a negative impact on the crop.

Now that the first stage of spring work has been completed and the focus of attention is gradually turning to cultivation, farmers are

also making final preparations for the harvesting of fodder crops. The organization of this work is especially important. It cannot be only a question of harvesting as much as possible, but also of assuring the highest possible quality of the fodder that is actually produced. This was emphasized at the 11th Plenum of the CPCZ Central Committee.

9276

CS0: 2400/407

CZECHOSLOVAKIA

SCIENTIST ANALYZES TECHNOLOGY INTRODUCTION PROBLEMS

LD101106 Prague Domestic Service in Czech 0700 GMT 9 Jun 85

[Summary] Prof Eng Zdenek Caha, candidate of science, analyzes the current problems encountered in implementing new technology in the CSSR.

Scientific achievements are undoubtedly very important these days. There is a tendency to exaggerate this importance, however. The issue of real concern is the introduction of new technology, because it represents a link between science and production. In the process of implementing scientific achievements through technology, it is important that the mode and level of technological innovations be carried out in accordance with the outlined tasks and social needs. The fact that this is not always possible is well known.

Implementation of scientific achievements requires changes in technological, economic, and social conditions. Production, on the other hand, naturally demands stabilization of these conditions. This results in a contradiction between science and production requirements, which can generate some undesirable phenomena. This fact is further highlighted by genuine support for the introduction of scientific achievements via new technology. This enthusiasm often lacks rationality, however. Consequently the process of new introducing technology becomes a matter of prestige and thus turns into an end rather than a means. The factors having the most negative influence on the introduction of new technology can be summarized as follows:

1. Absence of purpose. New technologies are often introduced without sufficient consideration of their purpose. In this connection little or no thought is given to the economic and social consequences of this action.
2. Attempts to carry out the speediest introduction of new technology often lead to their mass scale introduction. The smaller scale testing, which often determines suitability, is omitted. This can lead to partial or total failure of the entire system.
3. New technology is often introduced into the old organizational framework, which tends to slow down its impact and limits potential.
4. Conservatism among the people also puts a brake on the introduction of new technologies.

5. The biggest obstacle to rational use of the new technology is its operational unreliability. Indeed, a number of other shortcomings can easily hide behind this issue.

There are many cases when a conglomeration of certain shortcomings causes a situation in which rational use of new technology is made impossible or its utilization is considerably delayed.

Considerable efforts, usually carried out in a highly tense atmosphere, have to be exerted in order to deal with the errors made in the process of the introduction and use of new technology.

CSO: 2400/449

CZECHOSLOVAKIA

BRIEFS

CSSR-PRC SPINNING MACHINE PACT--A cooperation agreement in the manufacture of BD200 spindless spinning machines was signed in Beijing today in the presence of Bohumil Urgan, Czechoslovak minister of foreign trade, and (?Chu Zhungtie), deputy minister in charge of the PRC's State Economic Committee. According to the agreement, Czechoslovakia will supply the machines, their components and production documentation. [Text] [Prague Domestic Service in Czech and Slovak 1400 GMT 10 Jun 85 LD]

CSO: 2400/449

GERMAN DEMOCRATIC REPUBLIC

GDR, USSR COOPERATION IN AGRICULTURAL RESEARCH, HYBRIDIZATION

East Berlin BAUERN-ECHO in German 3 May 85 p 7

[Interview with Prof Dr Dieter Spaar, first vice president of the GDR Academy for Agricultural Sciences by Annedore Zinn; date and place not specified]

[Excerpts] BAUERN-ECHO: Currently virtually no research topic dealt with by the Academy of Agricultural Sciences is handled without cooperation with other scientific institutions. Why is research cooperation so vital to the guarantee of the necessary scientific advances in agriculture, forestry and the food industry?

Spaar: As in other sectors of the national economy, scientific-technical progress ultimately decides the speed and dimension of the intensification of production in agriculture, decides yields and performance as well as the accomplishment of supply tasks. Agricultural research is therefore geared to lastingly promote transition to a new level of intensification. This will enable us to make the transition to an all-round fund conserving type of farming. Advances in the further intensification of our agriculture will largely depend on the success achieved by our agricultural scientists and their cooperation partners in the accomplishment of top performances in research and the fastest possible introduction to day-to-day operations of these new results which will yield a great deal of economic profit.

That is why the AdL [Academy of Agricultural Sciences] is steadily deepening its cooperation with the Academy of Sciences, the Construction Academy, the industrial combines and the factories making agricultural equipment. At the same time it develops international socialist science cooperation, especially with the Soviet Union and the other CEMA member countries.

Research cooperation is crucial for the highest possible standard of theory and the broadest possible efficacy in day-to-day practical operations. In agriculture, forestry and the food industry, too, basic research must provide new and effective influences. Future performance development will depend to a decisive extent on the results of molecular biology, genetic technology and biotechnology as well as the control of biological processes and the use of microelectronics.

Nowadays agricultural research by itself is unable to achieve much. Interaction with other cooperation partners has an ever growing role. The Kleinmachnow Institute for Plant Research (a member of the AdL), for example, maintains cooperation relations with five institutes of the Academy of Sciences, fourteen university facilities, industrial firms and 30 LPG's and VEG's--all in order to accomplish the research tasks assigned to it. Management now has the vital task on the basis of coordinated or common tasking workbooks to guarantee a greater mandatory effect for the entire chain of cooperation.

In summation, let me say with regard to this question, that the development of efficient national and international socialist economic cooperation has a preeminent place value, because it allows us more profitably to utilize the considerable research potential of our agriculture and maximize its strengths. It is thus turning into a decisive factor of the speed-up of scientific-technical progress in farming.

At the present time, more than 11 percent of the staff and scholars at our academy have been undergraduates or postgraduates at Soviet Universities or worked for many years either as postgraduates or in other capacities at Soviet research institutes. They include many of our senior comrades, directors of institutes and departments, who are passing on to the next generation of scientists the knowledge and experience gained in the Soviet Union and, in particular, their profound affection for the Soviet Union.

Common Successes in Plant Breeding

BAUERN-ECHO: Which results of joint research cooperation do you think are particularly worth indicating?

Spaar: The spectrum of science cooperation ranges from research on the reproduction and improvement of soil fertility, fertilization, crop protection and plant breeding through the development of industrialized processes of crop and livestock production. Our cooperation is concerned to find new approaches to mechanization, achieve the complex and energy conserving propagation and raising of livestock, animal nutrition and feeding as well as veterinary medicine and also deal with farm economics and management from the standpoint of research.

Joint plant breeding is the widest in scope. That corresponds to its importance for the growth of efficiency in farming. In addition to the creation of community varieties, the greatest profit derived from cooperation consists in the accelerating advances in breeding due to the purposeful division of labor in breeding research and practical breeding, and in a significant joint expansion of the original genetic material.

Currently, cooperation in plant breeding is coordinated by nine joint breeding councils. The Quedlinburg Institute for Breeding Research and the Leningrad Union Institute for Crop Cultivation, for example, are carrying on joint

studies of the plant assortments with a view to developing those varieties which will most efficiently exploit solar energy, water and nutrients and convert them into high yields.

The Bernburg-Hadmersleben Institute for Grain Research and the Union Institute for the Breeding and Seed Production of the Mironowka Wheat Variety produced the "Miras" community variety. This was licensed in the GDR in 1984. It is distinguished by early ripening and suitability for baking and clearly excels all earlier varieties of the group of quickly ripening wheat in the matter of yield--of course provided production conditions are appropriate. Other promising winter wheat varieties suitable for baking, early ripening and improved hardiness are undergoing official testing in both countries.

Soviet varieties from Mironowka substantially contributed to the improvement of wheat yields in the GDR. Our great esteem was expressed at the time by the bestowal of the GDR Star of the Peoples' Friendship on Academy member V.N. Remeslo, then director of the Union Institute for the Breeding and Seed Production of the Mironowka Wheat Variety, and the grant of the GDR National Prize to a joint collective of scientists.

Joint cross breeding programs are also in progress in potato breeding, involving the Gross Luesewitz Institute for Potato Breeding and the Minsk Belorussian Research Institute for Potato, Vegetable and Fruit Cultivation. This research focuses on such qualities as good taste and consistency, resistance to phytophthora, viral diseases and nematodes as well as hardiness with regard to mechanical damage. Both countries are testing extensive assortments of common genetic stock.

In view of the resumption of starch potato breeding in the GDR, breeding advances in the matter of starch content have assumed great importance. These advances have occurred in the USSR which is dominating the world standard in this field. At the present time, state testing of the first community variety "Dobro" is being completed in the USSR. The variety is intensively reproduced in the GDR, providing the prerequisites for the build-up of maintenance breeding.

Corn breeding cooperation between the Bernburg-Hadmersleben Institute for Grain Research and the Kuban out station of the Leningrad Union Institute for Crop Cultivation is concerned with the creation of early ripening and high yielding hybrids with improved tolerance for cold and suitability for use as feed corn, silage or for pelletization. Such joint hybrids as "Bekosta" and "Bekos 251" are among the most important corn varieties in the GDR. In recent years, the USSR licensed three community hybrids.

Very valuable for the GDR are the common studies on the biological activity of the soil and the application of preparations of nodule bacteria to legumes. These are being carried out by the Muencheberg Research Center for Soil Fertility and the Leningrad Union Institute for Agricultural Microbiology. The GDR obtained extensive assistance in carrying out various experiments, in further education of cadres in this field and the beginning of the production of bacterial preparations.

Great practical importance must be assigned the creation of a joint information and consultation system for controlling irrigation on the basis of electronic data processing. This was done jointly by the Muencheberg Research Institute for Soil Fertility and the Ukrainian Research Institute for Water Management and Land Improvement at Kiev. The second generation of this system has been successfully tested and a joint research report defended. The system is to be applied in 1985 on 900,000 hectares in the USSR and 350,000 hectares in the GDR.

The examples submitted convincingly demonstrate that scientific-technical cooperation by partner institutes in the USSR and the GDR in the field of agricultural science is developing successfully, and that significant results for day-to-day operations are being achieved.

Potentials for Greater Efficiency

BAUERN-ECHO: Most probably, the managements of the GDR AdL and the Kiev Lenin Academy will meet in October 1985 for the Fifth Joint Consultation. What are the main topics?

Spaar: This joint consultation will be concerned with the following topics (among others):

-- Comprehensive reciprocal information about the research results achieved in recent years, and which are likely to be of interest to the partner;

-- The thorough evaluation of the results of cooperation, including conclusions with regard to the improvement of the efficiency of implementation and their application in practice;

-- The discussion of key points and methods of cooperation in the coming plan period on the basis of our long-range research plans.

Fraternal cooperation by the agricultural researchers in the GDR and the USSR is thus firmly established in our work. Both parties may confidently start from the assumption that we have long standing experiences and the necessary potentials to successfully cope with the rising challenges to our joint efforts.

BAUERN-ECHO: We thank you for this interview.

11698

CSO: 2300/0410

GERMAN DEMOCRATIC REPUBLIC

OVERVIEW OF AGRICULTURAL PROBLEMS, REFORMS SINCE 1972

Cologne DEUTSCHLAND ARCHIV in German Vol 18 No 4, Apr 85 pp 396-411

[Article by Karl Eckart: "Changes in GDR Agriculture Since the Early 1970's"]

[Text] Introduction

In the beginning of the 1970's, the GDR attempted to transfer to agriculture the principles of industry (concentration, specialization, division of labor and multishift work). A theoretical concept was to be applied in daily life. Some successes were recorded initially, for example in the sphere of crop production. For a time, harmony prevailed between theory and practice, between costs and yield. That made it all the harder to be compelled to renounce this concept. The compelling need first issued from the economic sector where the framework had suddenly assumed entirely different outlines. The GDR leaders had no choice: They were forced to pragmatically respond to the new situation.

This article traces the objectives, development, problems and results of industrialized farm production in the GDR and deals in detail with the corrections attempted since the end of the 1970's and discernible specially after the Tenth SED Congress in April 1981 and the Twelfth Farmers Congress in May 1982.

The Objectives of Industrialized Farm Production

The third agrarian reform was initiated at the Eighth German Farmers Congress in 1964, following the land reform in the period 1945-1948 and collectivization from 1952-1961. It involved, among other factors, the planned transition to industrialized production methods.

Mergers of LPG's and VEG's [state farms] were deemed imperative for the achievement of this objective. Consequently numerous cooperations for crop cultivation and animal husbandry were established. This phase lasted until about 1970 and represented a necessary developmental and transitional stage in the advance toward industrially producing facilities.

In 1972, then CC member Grueneberg listed eight features typical for the introduction of industrialized production methods in agriculture (Grueneberg

1972, pp 27ff*). The following are some of them:

1. Manual labor is to be replaced by machine systems rather than by one or the other machine.
2. Large specialized production units must be set up to be able to optimally use these machine systems.
3. These production units must steadily produce large quantities of farm produce in a specific period while keeping quality on an even keel, so as to respond to the increasing demands of the industrial processing and marketing enterprises.
4. Specialization (as, for example, in crop protection and fertilizer application) will go so far that this work is transferred to independent operators, for instance agrochemical centers (ACZ).

The Development of Industrialized Farm Production in the 1970's

Any agriculture characterized by the features noted above requires the restructuring of earlier production and organizational conditions. This proceeded from 1972 on by the development of the strictly separated sectors for crop and animal production. The result was the establishment of, for example, cooperative crop production departments (KAP). Cooperative work was to surmount the enterprise limits "which impose crucial restrictions on the introduction of industrialized production methods and, therefore, scientific-technical progress" (Collective of Authors 1974, p 608). No minimum size was stipulated for the KAP's so as to allow for regional differences (Collective of Authors 1968, p 124).

In the course of time, the KAP's developed into LPG's for crop production (LPG[P]) or, if the state farm's share predominated, VEG's for crop production (VEG[P]). They are legally independent and industrially operating production units where not only the most modern machinery is used but where shift work is prevalent also. Most machines are run by several shifts from March to November. All vital work, ranging from spring preparation through cultivation and harvesting to winter preparation, is organized for shift work.

By 1982, the majority of KAP's had been converted to LPG(P) or VEG(P). The development of KAP's to LPG(P) or VEG(P) always proceeded in several stages, and the steps were roughly similar (Eckart 1977, p 37):

1. Concentration and diminution of types of crops cultivated.
2. Increase in the areas planted to the fewer types of crops.
3. Change in crop rotation.
4. The establishment of work brigades.

5. The complex use of machines.
6. The introduction of shift work.

A total of 73 VEG(P) and 119 LPG(P) had been set up by 1982. Their average holdings amounted to 5,960 hectares and 4,779 hectares respectively (SJD 1983, p 179). The first tabulation of the structure of these enterprise dimensions appeared in 1981 (Table 1). It shows that in 1981 41 percent of all LPG(P) and VEG(P) had achieved holdings ranging from 4,000 hectares to 6,000 hectares. Holdings in excess of 8,000 hectares and less than 2,000 hectares were relatively rare. The increase in the size of the units resulted in internal enterprise transport distances of 30 km and more.

Table 1: Enterprise Sizes of Crop Production LPG's and Crop Production VEG's (1981)

Enterprise Size (hectares agricultural area)	LPG's and VEG's	Percentage Shares
up to 2,000	15	1.3
2,001 to 4,000	369	31.9
4,001 to 6,000	475	41.0
6,001 to 8,000	249	21.5
<u>more than 8,000</u>	<u>50</u>	<u>4.3</u>
Total	1.158	100.0

Source: Eberhardt 1982, p 3.

More and more trucks and tractors were needed. Though the total of tractors rose only from about 149,000 to 150,000, shifts occurred within the various groups of traction. The numbers of light tractors diminished, those of heavy tractors increased steadily. Buses and minibuses also proliferated. In 1976, for example, 3,897 buses and 872 passenger carrying and accommodation trailers were used in socialist agriculture (Hey 1978, p 363).

Special agrochemical centers (ACZ's) arose for spreading solid and liquid mineral fertilizers. They also handle the application of herbicides and insecticides. Aircraft are used a good deal. The use of machine systems, the so-called complexes, instead of individual machines is typical for industrialized production methods. In 1976, orientation data on the sizes of complexes were published, relating to the various farming processes (Table 2). In the mid-1970's, for example, a combine harvester complex with 10-15 combine harvesters represented the recommended standard for the grain harvest. The daily operation envisaged amounted to 100-150 hectares, the annual performance 2,500-3,750 hectares.

Table 2: Current Orientation Data on Complex Size and Performance

	Complex Size	Performance Capacity (a) hectare/day	Annual Performance hectares
Grain harvest	10-15 combine harvesters E512	100-150	2,500-3,750
Potato harvest	8-12 collector lifters E665	35- 45	700-1,000
Sugar beet harvest	4-6 six-row harvesters KS6 (b)	50- 80	800-1,200
Wilted silage harvest	3-6 chaff cutters E280	80-120	4,000-6,000 (c)
Plowing	2-3 tractors K700, 1 tractor ZT 300	50- 70	4,000-6,000

(a) If two shifts are worked

(b) With topping equipment assigned in relation to performance

(c) Cut hectare by 0.5 equals fodder cultivation area

SOURCE: Eberhardt and Gramen 1976

Obviously such complexes could be operated only on areas of cultivation of the corresponding size and crop structure. The ruthless land improvement measures carried out obliterated hedges and fences, and though scientists had calculated optimum field sizes (contiguous fields carrying the same crop) of 72 hectares (1,200 meters long, 600 meters wide), some areas were much larger.

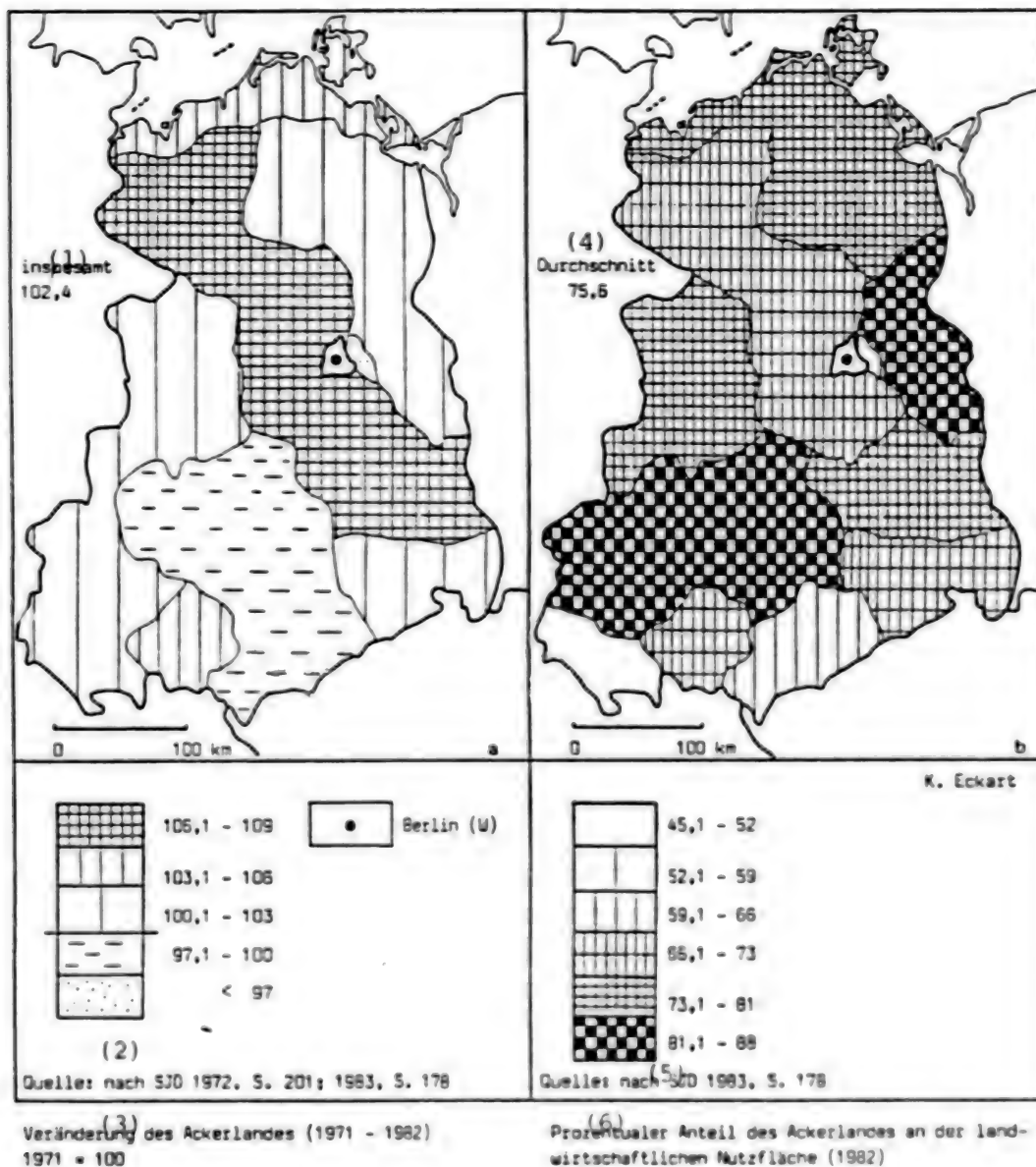
In addition to field sizes, radical changes occurred in the structure of land use. This shows up first of all in the shift between arable and pasture land: The arable area has expanded by a total of 2.4 percent while pasture land shrunk accordingly.

If we assign 100 to the arable area of each bezirk in 1971, Illustration 1a demonstrates that the rate of change varied until 1982. More than three quarters of the about 109,000 hectares increase were accounted for by Potsdam Bezirk (34,235 hectares), Schwerin Bezirk (31,049 hectares) and Cottbus Bezirk (18,394 hectares) (SJD 1972, p 201; 1983, p 178). This tremendous expansion in area is juxtaposed with a slight decline in area in three southern bezirks (Halle, Leipzig, Karl-Marx-Stadt). The total area involved amounted to just on 10,000 hectares. In 1982, the various bezirks showed a varied share in arable land in the agricultural area (LN) (Illustration 1). It ranged from 49.6 percent in Suhl Bezirk to 84.5 percent in Halle Bezirk.

The expansion of arable land was accompanied by a reduction in the area of pasture land. This diminished by a total of 206,118 hectares (roughly 14 percent!) in the period 1971-1982. In Potsdam Bezirk alone, the area of

pasture land was reduced by more than 31,000 hectares. Even in Cottbus Bezirk the area of pasture land shrank by almost 22,000 hectares.

Illustration 1: Arable Land



Key:

1. Total
2. Source: As per SJD 1972, p 201; 1983, p 178
3. Change in arable land (1971-1982), 1971 = 100
4. Average
5. Source: As per SJD 1983, p 178
6. Percentage of arable land in the agricultural area (1982)

Substantial changes in area also occurred with regard to the use of fields. In general we may assert that a regional and structural change took place in 1971-1982. The very great expansion of barley cultivation was particularly conspicuous. Wheat, rye and oats, on the other hand, lost ground. The increasing concentration on one type of grain was accompanied by the regional concentration of cultivation. The same applies to the change in the area devoted to potato growing though not to the area specializing in sugar beet. Lastly we also note a regional concentration in the cultivation of field fodder crops, specially with regard to fresh and storage corn.

To some extent this met the demand for site appropriate concentration and regional specialization (Collective of Authors 1980, p 278) and facilitated the deployment of large machine complexes.

Changes analogous to those in arable farming occurred in animal husbandry. Beef cattle stocks, for example, increased in all districts (with the exception of East Berlin) by a total of about 300,000 heads. On the other hand, the stock of dairy cows declined by 49,791 head. The percentage of dairy cows in total beef cattle stocks dropped substantially. In 1971 it still amounted to an average of 41.1 percent, by 1982 it was only 37.3 percent. The expansion of meat output is thus quite unmistakable. While the changes in beef and dairy cattle stocks were relatively minor, pig stocks were radically increased. Overall stocks expanded by some 2.1 million head (21.1 percent). Rostock (282,799), Neubrandenburg (262,950) and Potsdam (231,769) bezirks recorded specially large increases.

Sheep stocks also rose sharply, by 590,929 head (36.8 percent). Stocks in Karl-Marx-Stadt Bezirk expanded by 82,350. More major increases were recorded in Erfurt Bezirk (63,101), Leipzig (60,116) and Halle (58,023). Similar to the situation in the use of arable land, structural and regional concentration is well discernible in animal husbandry.

Mergers between LPG's and VEG's were the indispensable prerequisites for the developments in animal husbandry cited here, because they were needed to make possible the construction of large-scale barns. These achieved remarkable dimensions as early as the cooperation phase of 1964-1970 (Table 3) but were still not anything like large enough for subsequent targets. Animal production VEG's and animal production LPG's arose, which created facilities with minimum capacities such as dairy cattle facilities with 1,930 stalls, pig feeding facilities with 24,000 stalls (BAUERN-ECHO, 30 November 1973).

Already in 1979 respectable herds were stabled in the above mentioned large-scale facilities, such as 30.5 percent of all meat pigs in herds of more than 3,000 head or 38.7 percent of all heifers and bullocks in facilities with more than 1,000 stalls (DAI No 2/1984, p 17). A large percentage of these stocks were held in cooperative facilities of VEG's and LPG's. All these ranches are industrialized producer facilities where the need for manual labor has been steadily reduced. In 1971 47 percent of all cows still needed to be hand fed, in 1981 only 27 percent. The percentage for meat pigs was 61 percent in 1973, 45 percent in 1981.

Table 3: Typical Capacities of New Constructions for Animal Production

Period	Stalls per Barn or Facility in New Constructions			
	Dairy Cows	Heifers/Bullocks	Sows	Meat Pigs
1952-1957	60- 90	100- 300	24- 100	100- 400
1958-1963	90- 400	200- 500	20- 100	200- 2,000
1964-1969	200- 800	400-2,500	100- 600	1,000- 4,000
1970-1973	400-1,200	700-4,000	400-1,300	4,000-20,000
since 1974	1,930	4,480	5,600	24,000

Source: Manke 1974, p 313

Table 4: Percentage Development of Stalls Serviced by Manual Labor According to Livestock Species and Operating Methods in the GDR

Livestock Species	Feeding			Barn Cleaning		
	1973	1976	1981	1973	1976	1981
Cows	47	45	27	44	38	16
Heifers/bullocks	61	56	34	53	49	22
Beef cattle	68	69	44	60	63	30
Calves	-	90	-	-	80	-
Breeding sows	81	67	66	78	59	45
Meat pigs	61	60	45	55	56	40

Source: DAI No 2/1984, p 17

Problems of Industrialized Agriculture

However, more and more problems arose in the course of time both in crop production and animal husbandry:

- Due to the use of large machines, it was not possible to cultivate some parts of the parcels of land, in particular the spots where machines and devices need to turn around in the course of field cultivation. This resulted in the incidence of many unused fragments of land.
- Upon multiple deployment, the increasing use of heavy tractors compacted the soil. Mainly responsible here were the heavy Soviet tractors, trucks and harvesters which compacted the soil to a depth of 30-40 cm. This prevents satisfactory soil aeration, makes water and nutrient absorption more difficult and restricts the action of soil fauna and flora. In 1982 more than half the GDR's agricultural area is reported to have been

compacted and 10 percent threatened by standing water (Groschoff and others, 1982, p 1801).

- The increasing employment of aircraft for fertilization and crop protection does not allow for differences in location.
- The removal of paths and hedges in the course of land improvement measures considerably increased the threat of erosion by wind and water.
- The emphasis on concentration of cultivation made for more and more problems relating to crop sequence. The soil no longer obtained sufficient organic substances such as organic manure, plant residues and intermediate crops (Groschoff and others, 1982, p 1901).
- Fuel use for internal enterprise passenger and bulk freight transports assumed excessive dimensions.
- State subsidies for machines and devices rose substantially.

One of the chief immediate problems with regard to animal production is the tremendous cost of investment. Something like 1,000 tons cement are needed to construct a cattle barn for 2,200 heads of beef or 6,000 pigs. This is equivalent to the cement used for the construction of 77 housing units of 56 square meters each (DBZ 1974, p 9). As the housing shortage still persisted in the early 1970's, these additional projects represented a serious burden on the construction sector (Collective of Authors 1973, p 107). Moreover, the construction of a 2,000 head dairy cattle facility cost M2,690,000 (DBZ 1972, p 16).

Investment costs for these facilities rose rapidly as the result of increased prices of construction, not only due to modern construction methods and larger costs (optimum barn temperatures), efficient processing equipment (for example for feeding and manure removal).

Large livestock losses turned out to be another problem. Diseases among the livestock kept on multiplying. Since 1978, the incidence of respiratory diseases in calves has risen (Wernicke, 1983, p 6). Gastro-intestinal diseases among piglets represent a major problem. Mortality figures for young livestock remain excessive to this day (Wrangmore and others, 1982, p 6).

Another progressive problem is that of the huge volume of liquid manure (Table 5). The dimension of this volume may be illustrated by comparative figures: The incidence of sewage in a dairy cattle facility with 1,930 head corresponds to that of a city with 25,000 residents. A meat pig installation with 100,000 stalls produces as much sewage as a city with 100,000 residents (Collective of Authors, 1976, p 89).

The diminution in pasturing beef cattle resulted in two more problems: It first of all necessitated the construction of drying plants and, secondly, required fodder to be transported across longer distances. Diesel fuel consumption and energy use in drying plants jumped immeasurably.

In 1977, agriculture, forestry and the food industry claimed some 10 percent of the GDR's operational energy. It was the third largest energy consumer in the national economy, exceeded only by the chemical and metallurgical industries. However, only four sectors accounted for roughly two thirds of all energy consumed in agriculture. Crop production (25 percent) held the largest share by far, followed at a distance by animal husbandry (14 percent), mechanical drying (13 percent) and hothouse management (11 percent) (Collective of Authors 19080, pp 144-145).

Table 5: Average Incidence of Liquid Manure and Nutrients from Industrialized Livestock Production Facilities (tons)

Facility	Stalls	Liquid Manure (8% Dry Substance)	Nutrients (Pure Nutrient)		
			N	P	K
Dairy cattle	1,930	45,000	195	35	195
Calf raising	3,200	-	64	15	31
Heifer/bullock raising	4,480	80,000	206	42	155
Feeder beef	16,000	160,000	580	134	488
Meat pigs	25,000	120,000	420	65	190

Source: Collective of Authors, 1980, p 374.

Among the changes in GDR farming since the early 1970's, we must include more than operational and organizational transformations and some of the regional and structural shifts resulting therefrom. Also to be mentioned are changes in yields and opportunities for raising yields.

With regard to grain, for example, increases in yields were recorded until 1974 (Illustration 2). Subsequently, however, a decline set in, followed by another high in 1978. Since then fluctuations in yields have been minor. Wheat and barley yields were appreciably greater than rye yields.

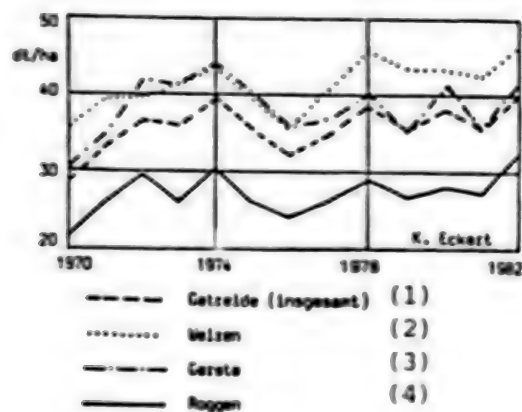
Root crop yields, too, changed each year (Illustration 3). However, no increase was recorded in the average of the period; in fact there has been a decline. While 1982 potato yields were only slightly below those of 1970, the difference was considerably greater for sugar beet. Roughly 40 decitons per hectare fewer sugar beets were harvested in 1982.

Another change occurred in the output of green mass per hectare (see Illustration 4). Though output of meadows and pastures showed a relatively solid increase, and so did that of field fodder crops generally, 1982 yields of green and storage corn were well below those of 1970. They also fluctuated very widely from one year to the next.

Chemicalization was certainly emphasized, but it evidently did not contribute much to the rise in yields. The "doping of the fields" (Nordhoff, 1982, pp

487-495) did not achieve the desired results. Fertilizers were liberally applied but the end result bore no relationship to the yields obtained.

Illustration 2: Development of Grain Yields (dt/ha [decitons per hectare])



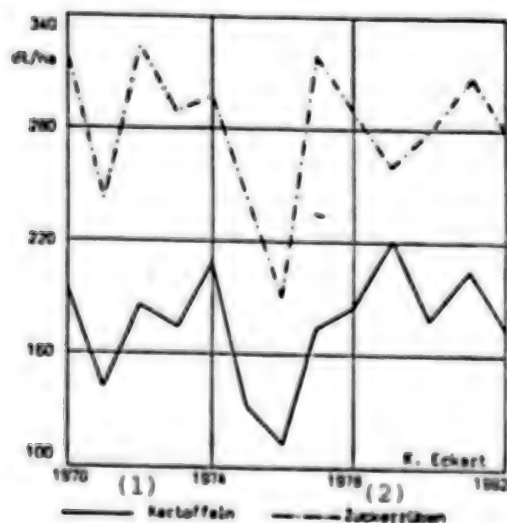
Key:

- 1. Grain (total)
- 2. Wheat

- 3. Barley
- 4. Rye

Source: as per SJD, 1983, p 40.

Illustration 3: Development of Root Crop Yields (dt/ha)



[Key on following page]

Key:

1. Potatoes

2. Sugar beet

Source: As per SJD 1983, p 40

The same applies to the increasing mechanization. The functional value of some of the harvesters was very low. Large harvesting losses occurred, amounting in 1982 to more than 5 percent of the ripe beet in the fields (Quix and Kretschmar, 1983, p 26). Past potato harvests also were subject to substantial losses. Even in 1981, subsequent collections on lifted fields yielded up to 20 dt/ha (Lehmann, 1981, p 4).

In contrast to crop output, yields in livestock production recorded more or less evident growth. That holds true for pigs, beef cattle and calves as well as for poultry and rabbits. The output of cow's milk, hen's eggs and sheep wool has also risen. However, as regards cow's milk, average yields held steady from 1975 through 1980 but have dropped since.

Domestic fodder supplies did not suffice to achieve these yields, so that imports were increasingly needed (for example crushed grain and pressed cake). In the first half of the 1970's, the FRG and Syria were the outstanding supplier countries; lately India and Brazil have assumed greater importance. Potash fertilizer has been increasingly exported to these two latter countries (SJD, 1983, pp 242-245). While imports of crushed grain and pressed cake rose steadily in the period under review, considerable fluctuations occurred with respect to wheat, barley, corn and potatoes--depending on the result of the harvest.

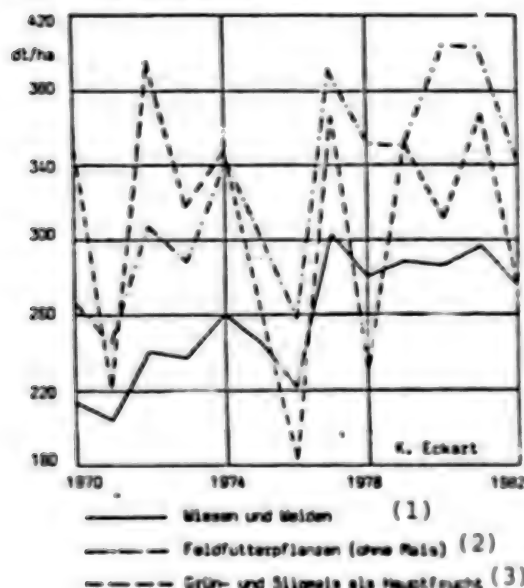
Grain imports in the first half of the 1970's originated almost exclusively in the Soviet Union. Due evidently to its own difficult supply situation, the Soviet Union subsequently cut deliveries. Instead grain had to be imported from the United States, 2.88 million tons in 1976, 3.12 million tons in 1980 (Haendcke-Hoppe, 1983, p 381).

In the first half of the 1970's, some potatoes were imported from Bulgaria, in the second half mainly from Romania (SJD, 1976, p 276). Also in the early 1970's, additional crushed soy beans were imported from the Netherlands, toward the end of the 1970's fish meal was purchased from Norway (SJD, 1976, p 274). In early 1982, the GDR obtained roughly 270,000 tons fodder grain from the FRG. In early 1983, it purchased 1 million tons grain from Canada (700,000 tons fodder barley, 275,000 fodder wheat and 25,000 tons durum wheat for human consumption (DAI, 1983, p 6).

It appears, therefore, that fodder supplies still represent a serious problem. The state budget was increasingly strained by the necessity of buying fodder on the world market. Still, at least these sometimes substantial fodder imports allowed livestock production to be kept at a comparatively high level.

Illustration 4: Yields of the Green Mass

Abb. 4: Erträge der Grünmasse



Key:

1. Meadows and pastures
2. Field fodder crops
(excluding corn)

2. Green and storage corn as the main
crop

Source: as per SJD, 1983, p 41

In addition, all conceivable reserves were fully exploited. An example of this is the use of forests for grazing, customary in Central Europe in the middle of the 19th Century. This achieved growing importance once again, specially in years of drought, such as 1976. Also vital is the collection of kitchen wastes from institutional kitchens, hospitals, and so on. Another item to be mentioned is the cultivation of corn as a green fodder on land fragments and the margins of large fields. Without the use of all these and other reserves, fodder supplies for livestock would certainly be even more of a problem and yields in livestock production lower yet. Another problem arose

from the use of wrong or low quality fodder. Fodder quality often left much to be desired. I have earlier indicated the loss of yields as a result of excessive mortality among young livestock, frequent epidemics, and so on. In summation: The following may be said of the objectives, development and problems of industrialized agriculture in the 1970's:

- The expected increases in the yield of crops failed to materialize. The disproportion between cost and yield actually widened.
- *-- The necessity therefore arose for steadily raising the volume of imports of fodder grains and protein feed.
- The consumption of capital equipment and subsidies recorded a tremendous rise (Table 6). In 1980, the state budget needed to pay some M1,000 per hectare LN [agricultural area] to agriculture (Hohmann, 1982, p 20).
- The situation was aggravated by the unforeseen change in the overall international economic situation, reflected (among other factors) in much reduced oil deliveries by the Soviet Union.

Table 6: GDR State Budget Spending on Agriculture, Forestry and Water Management and the Food Industry, 1980-1984

Type of Expenditure	1980	1981	1982	1983	1984
	Actual	Expenditure		Planned	Expenditure
	<u>million marks</u>				
1. Subsidies to lower procurement prices for capital equipment purchased by agriculture; subsidies to equalize unduly burdensome cost increases for VEG's and LPG's	6,112	6,366	7,688	7,700	2,146
2. Spending on land improvement and re-cultivation, price surcharges for special producer performances and spending on other output promoting measures in agriculture*	2,352	2,230	2,796	3,138	2,328
3. Spending on other maintenance and support subsidies for farms, forestry and waterworks enterprises	1,138	1,316	1,654	1,408	2,686
4. Spending for the payment of state earnings subsidies to dairy and grain farming					<u>5,483</u>

*Also included in this group of supportive measures is the reduction, financed by the state budget, in interest payable on loans incurred by farm enterprises to finance measures for the improvement of soil fertility, for example, the construction of efficient barns, silos or hothouses.

Source: Spindler, 1984, p 35 (Table 10)

Due to these developments, the GDR was compelled to suddenly change its farm policy. The consistent realization and further pursuit of the farming objectives prevalent for barely 10 years was possible to a reduced extent only.

Corrections to Agrarian Policy

The first deviation from the earlier agrarian policy was discernible in 1978. At that time, the stupidity of the increasingly energy intensive mechanical drying of straw, root crops and entire plants became all too obvious. Some operations were discontinued, and existing drying plant converted to the use of raw brown coal. The majority of straw pelleting facilities constructed in 1974-1977 were shut down for many months each year and, for a change, haying and pasturing promoted.

The agrarian line was officially amended in May 1980, when the decision to "further develop economic measures in socialist agriculture and the food industry from 1981 on" was proclaimed. Earlier prevailing spare part prices for agriculture were changed. Subsidies for repairs and replacement parts payable to crop growing enterprises were cut to 50 percent and abolished entirely for livestock production.

Two other important waystations for the development of GDR agriculture were the Twelfth Farmers Congress on 13/14 May 1982 and the farm price reform of 1 January 1984. Indicated at the Twelfth Farmers Congress, held in East Berlin in 1982, were the future lines of development and those problems addressed, which beset GDR farming (Honecker, 1982).

At the end of the 1982 harvest, an unprecedented emphasis was assigned the evaluation of results. This continued up to the onset of spring cultivation and involved, among others, discussions in the farm press. Many publications provided suggestions and recommendations for future improvements (Felfe, 1982, pp 3ff); Felfe, 1983, pp 3ff; Siegel, 1982, pp 945 ff; Blaschke and Sturzbacher, 1983, p 3).

While the separation of crop and livestock production was not abolished, links between these two forms of farming assumed increasing weight. Cooperation councils are supposed to meet far more frequently than before (Lang and others, 1982, p 555). Following the 1982 harvest, GDR technical periodicals pilloried far more than customary those farm enterprises which displayed deficient management and organization. In some cases, chairmen of LPG's with particularly poor harvest results were dismissed, sometimes the entire management personnel discharged also ("Aus Eigener Kraft..." [By Our Own Strength...], 1982, p 3).

In general, faulty enterprise organization was held responsible for the troubles plaguing agriculture. The first step toward improvement was represented by the decentralization of crop cultivation enterprises which were subdivided into smaller production sections. This resulted in greater consideration for local conditions by taking into account the respective soil and infrastructure (Schmidt and Butz 1983, pp 6 f). The same effort is

reflected in the reduction of field sizes. In early 1981, for example, the Lietzen (Seelow Kreis) VEG proceeded to break up land parcels. Instead of the former 83 fields, it now cultivates 126 fields. This means that 52 fields with an average size of 53 hectares were retained, while 31 fields of around 120 hectares each were split once or twice in the interest of better land use (DBZ, 11 February 1983).

Greater attention is to be devoted to crop sequences. In order to better use the period of vegetation by the increased cultivation of intermediate crops, to better observe breaks in cultivation and better exploit the green crop effect with respect to winter wheat, potatoes and sugar beet, crop sequences are to be customized for each LPG. Many years of the same grain sequences are to be reduced to the absolutely necessary minimum and labor intensive cultures better than hitherto distributed across the entire territory of the GDR. Recommended with special urgency is the increased cultivation of humus multipliers (clover, clover grass, alfalfa grasses, miscellaneous grasses) to improve soil fertility (Birkner, 1982, p 6; 1983, p 6). The provision of wind breaks is also emphasized. As I noted before, erosion by water and wind has grown in recent years. To prevent such erosion, 410 km of windbreaks were planted in the Havel country alone, each 3-4 meters wide (maples, lime trees, oaks, poplars and various bushes). This made it possible to regulate the total ecological budget on 50,000 hectares ("Winderosion...", 1980, p 4).

The so-called "regional principle" represents another concept which attracted the attention of economists and planners. LPG(P) work brigades used to have specific and normally narrowly circumscribed functions, carrying them out in the entire area of the enterprise. Now brigades are to be established, which will be responsible for various assignments within a narrowly circumscribed area, preferably in the vicinity of their residences. This is designed to reduce transportation costs and, therefore, diesel fuel consumption as well as better utilize the agricultural area. It is intended, in particular, to once again take advantage of the cooperative farmers' familiarity with local production conditions (DBZ 5 November 1982).

Some successes with the setting up of regional work brigades have already been recorded for livestock producers. This may be demonstrated by the example of the Edwin Hoernle Livestock Production LPG, of Berkach, Meiningen Kreis. As demonstrated in Table 7, production of beef cattle, pigs and broiler hens takes place in eight villages at distances of 22 km. Until 1982, the livestock species were organized in one section for beef cattle and pigs each as well as a broiler chicken brigade. These sections encompassed the entire area of the LPG. They were composed of several species or product oriented brigades and organized across several villages (Kuehlewind and others, 1983, p 401).

A new organizational structure was introduced as of 1 January 1982 (see table 8). Now there are two regional sections in the LPG production area, consisting of three regional brigades each. The product or species organization of the brigades was abandoned. A brigade now looks after beef cattle and pigs, not beef cattle only as used to be customary.

Table 7: Characteristic Features of the Edwin Hoernle Livestock Production LPG (1982)

Cooperative farmers	269 full-time personnel
Total beef cattle	3,715
Cows only	2,226
Total pigs	7,132
Sows only	628
Broiler chickens	12,000
Barn facilities	29
Villages with production facilities	8
Distance between the villages	22 km

Source: Kuehlewind, Kuehlewind and Neubert, 1983, p 401.

Table 8: Organizational Structure of the Edwin Hoernle Berkach Livestock Production (Excerpt)

(1)		(2)		(3)		(2)	
Abteilung I		111	AK	Abteilung II		99	AK
(4)	Abteilungsleiter	1	AK	4	Abteilungsleiter	1	AK
(5)	Milchkontrolleure	2	AK	5	Milchkontrolleure	2	AK
(6)	Besamer	1	AK	7	Klauenpfleger	1	AK
Brigade 1 Behrungen		36	AK	Brigade 4 Bibra		31	AK
(8)	Kühe	4	332 18	(8)	Kühe	1	468 7
(9)	Kälber bis 6 Monate	1	272 3	(14)	Farsen	1	108 7
(10)	Jungrinder	1	80 1	(9)	Kälber bis 6 Monate	1	50 2
(11)	Mastschweine	1	2600 5	(15)	Sauen	1	200 6
(12)	Broiler	1	7500 3	(13)	sonst. AK einschl. Leiter		6
(13)	sonst. AK einschl. Leiter		6				
Brigade 2 Berkach		38	AK	Brigade 5 Queienfeld-Wolffmannshausen		18	AK
(8)	Kühe	3	364 17	(8)	Kühe	1	53 6
(9)	Kälber bis 6 Monate	1	190 4	(7)	Mastrinder	1	100 2
(15)	Sauen	1	400 9	(7)	Läufer	1	400 2
(13)	sonst. AK einschl. Leiter		8	(13)	Mastschweine	1	2300 5
Brigade 3 Nordheim-Schwickershausen		33	AK	(13)	sonst. AK einschl. Leiter		6
(8)	Kühe	2	268 14	Brigade 6 Westenfild		46	AK
(9)	Kälber bis 6 Monate	1	40 1	(8)	Kühe	1	720 28
(14)	Farsen	1	62 4	(14)	Farsen	1	80 5
(16)	Mastrinder	1	120 2	(14)	Kälber	1	170 3
(11)	Mastschweine	1	700 2	(16)	Mastrinder	1	40 2
(12)	Broiler	1	1000 4	(13)	sonst. AK einschl. Leiter		8
(13)	sonst. AK einschl. Leiter		6				

[Key on following page]

Key:

- | | |
|---|-------------------------------------|
| 1. Section I | 9. Calves up to 6 months |
| 2. Section II | 10. Bullocks |
| 3. Personnel/Workers | 11. Meat pigs |
| 4. Section manager | 12. Broiler chickens |
| 5. Milk inspectors | 13. Other workers including manager |
| 6. Inseminators | 14. Heifers |
| 7. Person in charge of hooves and claws | 15. Sows |
| 8. Cows | 16. Feeder beef |
| | 17. Young pigs |

Columns 1-3: Barns, stalls, personnel/workers

Source: Kuehlewind and others, 1983, p 401.

Already in 1982 (compared with 1981), the conversion to regional work collectives resulted in a saving of 7.5 percent diesel fuel and 35.3 percent gasoline. It was also possible to reduce the stock of passenger cars from ten to six (Kuehlewind and others, 1983, p 402).

All attempts at changes and corrections are also concerned with reducing the differences in productivity, which still tend to be very noticeable indeed between enterprises or regions. This is exemplified by a comparison of grain yields between Halle and Magdeburg bezirks (Table 9). Though both bezirks are among the most fertile farm regions of the GDR and boast wide stretches of black earth (in other words enjoy comparable production conditions), it is quite obvious that yields in Halle Bezirk are usually substantially greater in every year. Evidently reserves remain to be exploited in Magdeburg Bezirk. When drafting the economic plans, the planners use the term "highest yield conceptions."

Table 9: Grain Yields (dt/ha)

	Halle Bezirk	Magdeburg Bezirk
1972	44.8	41.1
1973	42.0	35.2
1974	46.0	42.1
1975	42.1	37.2
1976	35.2	29.4
1977	39.2	38.8
1978	45.2	36.0
1979	44.6	36.3
1980	48.9	40.6
1981	45.2	36.3
1982	47.5	37.5

Source: SJD, 1974, pp 89,95; 1975, pp 85,91; 1977, pp 53,59; 1983, pp 77,83.

To raise crop production yields and reduce the differences in yield between enterprises with basically similar yield conditions, greater attention is now devoted to consistently dense crop stands. In early 1983, for example, sugar beet cultivation was required to handle a crop stand of 80,000 plants per hectare. Only Halle Bezirk actually managed to achieve this optimum stand. Rostock Bezirk managed only 72,000, Neubrandenburg Bezirk 75,400 plants per hectare (Felfe, 1983, p 5).

Manpower has been increasingly mobilized for the achievement of production and productivity increases. Though the labor force in GDR farming is still relatively large by comparison with other countries, manpower shortages are prevalent to this day. This is not only evident at harvest time, when the authorities appeal for volunteers. Young people, in particular, are constantly called upon to participate in farm work. In this sector of the economy also, we find many FDJ initiatives, such as the FDJ initiative "livestock production," founded in early 1983. By mid-1984, 2,500 FDJ members in 442 youth brigades had begun work in various inefficient LPG's (Aurich 1984, p 609).

Increasing Importance of the Private Farming

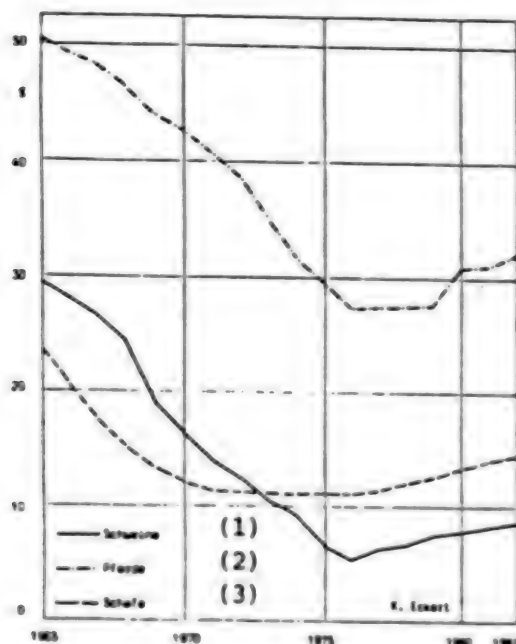
Private production was revalued and became respectable to the extent that socialist farming was confronted with growing supply problems. Of course this does not mean full-time and part-time farming such as carried on in the FRG, because this type of farming is quite insignificant in the GDR as regards both its incidence and area. Private farming mainly involves the private plots of LPG members. Though these have existed since the early 1960's, they were merely tolerated until the end of the 1970's and certainly not encouraged in any way. However, by the end of the 1970's, they had gained increasing importance for supplying the public at large. This was officially confirmed by the fact that the LPG law of 2 July 1982 no longer places a numerical restriction on private livestock keeping.

After their percentages in total livestock had steadily dropped up to the mid-1970's, some livestock species regained ground in the course of recent years (Illustration 5). Land allocation also underwent some change. The 1982 law no longer restricts private holdings to members of the cooperative. Manual and clerical workers employed in LPG's now also enjoy the right to have such private plots ("Law on...", 1982, p 21).

Lately allotments have also gained increasing importance. Up to the end of the 1950's, the SED leaders considered allotments a relic of an outdated social system. In the course of a lecture on urban planning (given in Dresden), Lothar Bolz, minister for reconstruction at the time, said that allotments were superfluous because they merely led workers astray by encouraging them to breed rabbits. Rabbit breeders were not wanted, wanted were only political people (DAI 1980, p 12). By contrast, allotment holders now are no longer considered a disruptive element in the socialist economy. On the contrary, they are urgently needed as a supplementary supply factor. This may be observed in the rising share of private farming in the supply of fruit and vegetables for the general public and in the increase in livestock

output (Eckart, 1983, p 417). In 1981, the approximately 1.15 million members of the VKSK [Union of Small Gardeners, Settlers and Small Livestock Breeders] supplied 300,000 geese, 13,000 tons rabbit meat and almost 2 billion eggs (40 percent of the total egg yield in the GDR) (ND, 28 December 1981).

Illustration 5: Percentage of the Respective Totals of Selected Livestock Holdings on the Private Plots of LPG Members



Key:

- 1. Pigs
- 2. Horses

3. Sheep

Sources: As per SJD 1974, p 222; 1975, pp 201-203; 1976, pp 201-203; 1977, pp 199-201; 1978, pp 179-181; 1979, 179-181; 181, 186-187; 1983m p 200

Since the early 1980's, economists and planners have been devoting attention to a third sector, in addition to the private plots of LPG members and the allotments of VKSK members. As long ago as the Ninth SED CC Politburo Plenum,

reserves in the villages were singled out with respect to the villagers' own supply of vegetables (BAUERN-ECHO, 14 March 1979).

In May and June 1980, the worker and peasant inspectorate checked all GDR districts for the proper use of the land, to make sure that every square meter of the total agricultural area (more than 6,280,000 hectares) is cultivated (DBZ, 14, 1980, p 13). These activities continued in subsequent years. Corn, for example, is now planted on the turn arounds of outsize fields, and sheep are met with increasing frequency on many formerly unused grass land.

Farm Price Reform

Lastly I must mention the farm price reform which took effect on 1 January 1984 and is described as one of the most radical political and economic measures in GDR farming (Lietz, 1984, p 498). In the course of this reform, purchase prices for capital equipment were raised as well as sales prices of farm produce (producer prices). The reform "further emphasizes the performance principle in the relations between the socialist state and the LPG's and VEG's just as between industry and agriculture" (Lietz, 1984, p 499).

The increase in purchase prices of machines, supplementary means of production and fertilizers (Table 10) is designed as an incentive for greater thrift and progressive cost reductions. This raise means that farming is no longer shielded against past price increases for industrial raw materials, semifinished and finished goods. Agriculture now needs to pay the same prices for commodities and services (for example farm machines and fertilizers), which have been charged industrial enterprises, the construction industry and others since 1978/1979 (Spindler, 1984, p 2).

To make it possible for these higher procurement prices to be paid,, producer prices were raised simultaneously with the increase in purchase prices (Tables 11 and 12).

Fodder prices were raised at the same time (Table 13). While producer prices of vegetal and animal products doubled at best, prices of all types of fodder almost tripled. This evidently reflects the urgent need to conserve imported fodder.

Summary and Outlook

When, in conclusion, we consider the development and the results of the attempt to transfer industrialized production methods to farming, we are bound to note that this concept broke down at the end of the 1970's. The failure to respect farm management principles is just as responsible for this breakdown as the changed international economic situation.

Table 10: Prices of Machines, Supplementary Means of Production and Fertilizer

Type of Machine	Price in Marks	
	1982	1984
-- Tractor		
(K 700/220 PS, Soviet origin)	113,000	162,000
(ZT 300100 PS, GDR production)	42,800	70,000
(MTS-50/56-60, Soviet origin)	24,000	35,000
-- Combine harvester (E 512, GDR production)	70,000	130,000
Supplementary Means of Production and Fertilizer		
Diesel fuel (liter)	0.55	1.40
Electricity (kilowatt/hour)	0.16	0.23
Nitrogen fertilizer (kg pure nutrient)	1.20	2.20
Phosphorous fertilizer (kg pure nutrient)	0.54	1.48
Potash fertilizer (kg pure nutrient)	0.37	0.67

Source: Spindler, 1984, pp 20,22

Table 11: Producer Prices for Selected Grain Species

Product	Price in Marks per dt	
	1982	1984
Wheat	35	64
Rye	45	66
Brewery barley	55	95
Podder barley	33	55
Podder oats	38	62

Source: Spindler, 1983, p 9

We may confidently claim that a new phase in farm policy began in 1979/1980. At this time, a concept for future farm policy is still lacking, unlike the situation upon introduction of land reform, collectivization and the establishment of the sectional system agriculture and food industry. However, an attempt to avert the worst has been made by way of the directives of the Tenth SED Congress (1981), the resolutions of the Twelfth Farmers Congress (1982) and the farm price reform of 1 January 1984. It has become perfectly obvious that it is not enough to develop all reserves. Above all it is imperative to abolish the disproportion between costs and yields. The "maximum yield conceptions" of the enterprises, drawn up for that very

purpose, are to contribute to the achievement of higher yields and far reaching independence of the fodder world market (Bibliography).

Table 12: Producer Prices for Sugar Beet, Potatoes and Rapeseed

Product	Price in Marks per dt	
	1982	1984
Sugar beet	8.50	15.20
Potatoes	27.00	47.00
Rapeseed	104.00	130.00

Source: Spindler, 1984, p 9

Table 13: Increase in Fodder Prices

Type of Fodder	Price in Marks per dt	
	1982	1984
Fish meal	83	216
Crushed soybeans	51	133
Dried flakes	26	66

Source: Spindler 1984, p 23.

Abbreviations of Periodicals, Newspapers, and so on

DBZ NEUE DEUTSCHE BAUERNZEITUNG
 DAI DDR AGRAR INFORMATION
 GBL GESETZBLATT
 ND NEUES DEUTSCHLAND
 SJD "Statistisches Jahrbuch der DDR" [GDR Statistical Yearbook]

SOURCES AND BIBLIOGRAPHY

1. Aurich, E.: "The FDJ in the 35th Year of the GDR," EINHEIT No 39, 1984, pp 606-612.
2. Collective of Authors: "Deutscher Bauernkongress Leipzig 1968. Protokoll" [German Farmers Congress Leipzig 1968. Minutes], East Berlin 1968.

3. Collective of Authors: "Einige Sozialoekonomische Entwicklungsprozesse in der Landwirtschaft der DDR" [Some Socioeconomic Development Processes in GDR Agriculture], agra buch, Leipzig, Markkleeberg 1973.
4. Collective of Authors: "Brockhaus abc der Landwirtschaft" [Brockhaus' ABC of Farming], Leipzig 1974, p 608.
5. Collective of Authors: "Industriemaessige Produktionsmethoden in der Sozialistischen Landwirtschaft der DDR - Entwicklung der Gesellschaftlichen Organisation der Produktion und der Arbeitsteilung" [Industrialized Production Methods in the GDR's Socialist Agriculture - Development of the Social Organization of Production and the Division of Labor], East Berlin 1976.
6. Collective of Authors: "Die Landwirtschaft der DDR" [GDR Farming], East Berlin 1980.
7. Birkner, A.: "Step by Step for Each Field and Each Type of Crop," BAUERN-ECHO, 23 December 1982, p 6.
8. Blaschke, R. and Sturzbacher, A.: "The Knowledge and Ability of Our Farmers Guarantee Success," NEUES DEUTSCHLAND, 20 January 1983, p 3.
9. "Land Use Decree of 17 December 1964," GBL II 1965, No 32.
10. German Rural Youth Academy, Fredeburg (editor): "Zur Situation der Landwirtschaft in der DDR" [On the Situation of Agriculture in the GDR], Fredeburg 1978, p 17.
11. Eberhardt, M. and Gramen, O.: "First Experiences in the Cooperative Use of Large Machine Complexes," FELDWIRTSCHAFT 1976, No 1.
12. Eberhardt, M.: "Often Too Much Still Remains on the Wheels," DBZ No 45/1982, p 3.
13. Eckart, K.: "Landwirtschaftliche Kooperationen in der DDR. Eine Geographische Untersuchung der Struktur und Entwicklung Sozialistischer Landwirtschaftsbetriebe" [Agricultural Cooperations in the GDR. A Geographical Study of the Structure and Development of Socialist Farm Enterprises], Wissenschaftliche Paperbacks Geographie, Wiesbaden 1977.
14. Eckart, K.: "The Significance of Private Plots for Supplying the GDR Population," DEUTSCHLAND ARCHIV 16 (21984) 4, pp 415-420.
15. Eckart, K.: "The Development of Corn Cultivation in the FRG and the GDR," DEUTSCHE STUDIEN (now printing).
16. Eckart, K.: "Recent Developments in the Farm Regions of the Two German States," DEUTSCHE STUDIEN 22 (1984) 3, pp 268-316.

17. Eckart, K.: "GDR Energy Problems Compel a Change in Farm Policy," DEUTSCHE OSTKUNDE 30 (1984_) 2, pp 63-66.
18. Eichler, Chr.: "The Brigade Leader Must Provide Sound Backing,," DBZ No 46/1982, pp 3f.
19. Felfe, W.: "The Common Struggle for Greater Efficiency in Agricultural Production," BAUERN-ECHO, 8 December 1982, pp 3ff.
20. Felfe, W.: "For the Best Possible Performance on Each Field and in Each Barn in the Karl Marx Year," DBZ No 4/1983, pp 3ff.
21. Franz, W.: "Management Problems in the Rationalization of Pig Production," KOOOPERATION 14 (1980) 2, pp 86-88.
22. Gaedke, G. and Meyer, Chr.: "Experiences Gained in the Weekly Work Standardization of the Pessin Crop Production LPG," FELDWIRTSCHAFT 24 (1983) 12, pp 537-541.
23. "Law on Agricultural Producer Cooperatives - LPG Law - of 2 July 1982," GBL pp 1-29.
24. Graefe, W. and Paul, R.: "On the Rational Organization of Operations," KOOOPERATION 18 (1984) 5, pp 213-216.
25. Groschoff, K., and others: "On the Further Socialist Intensification and Rationalization of GDR Agriculture, with Special Consideration of Crop Production," WIRTSCHAFTSWISSENSCHAFTEN No 12/1982, pp 1797-1820.
26. Grueneberg, G.: "Die Aufgaben bei der Weiteren Intensivierung der Landwirtschaftlichen Produktion, des Uebergangs zu Industriemaessigen Produktionsmethoden in der Landwirtschaft und Probleme der Entwicklung der Kooperationsbeziehungen" [Tasks Involved in the Further Intensification of Agricultural Production, the Transition to Industrialized Production Methods in Agriculture and Problems of the Development of Cooperation Relations], East Berlin 1972.
27. Haendcke-Hoppe, M.: "GDR Foreign Trade in the Sign of New Emphases," DEUTSCHLAND ARCHIV 15 (1983) 4, p 381.
28. Hey, W.: "Commuter Traffic in GDR Agriculture," INTERNATIONALE ZEITSCHRIFT DER LANDWIRTSCHAFT, Moscow/Berlin 1978, No 4, pp 363-364.
29. Hohmann, K.: "On the Energy Efficiency of GDR Farm Production" (FS-ANALYSEN 4/1982), Berlin 1982.
30. Honecker, E.: "Arbeiter und Bauern Hand in Hand fuer Sozialismus und Frieden, XII. Bauernkongress der DDR, Ueberarbeitetes Protokoll" [Workers and Farmers Hand in Hand for Socialism and Peace, Twelfth GDR Farmers Congress, Revised Minutes], East Berlin 1982.

31. Kubon, H.: "Principles for the Consideration of Regional Aspects in the Organization of Brigades and Sections, Taking Into Account Concrete Natural and Economic Production Conditions," FELDWIRTSCHAFT 24 (1983) 12, pp 530-534.
32. Kuehlewind, J., Kuehlewind, Chr. and Neubert, K.: "Edwin Hoernle Berkach Livestock Production LPG. Regional Work Collectives Passed the Test," KOOPERATION 17 (1983) 9, pp 400-4-2, 415.
33. Kundler, P.: "Maximum Yield Conceptions,," EINHEIT 39 (1984) 6, pp 505-508.
34. Lang, K. and others: "Own Supplies for Livestock Holdings - Substance of the Planning and Reporting of the Joint Reproduction Process," KOOPERATION No 12/1982, p 555.
35. Lehmann, H.: "Is the Subsequent Collection of Potatoes on Lifted Fields Worth While?" PRESSE-INFORMATIONEN DER DDR No 112, 25 September 1981.
36. Lietz, B.: "Efficient Farming More Profitable and Compelling," EINHEIT 39 (1984) 6, pp 498-504.
37. Manke, J.: "The Reconstruction of Animal Production Facilities," KOOPERATION (1974) 7.
38. Nordhoff, B.: "Industrialized Farm Production at a Dead End," DEUTSCHLAND ARCHIV 15 (1982) 5, pp 487-495.
39. Petersen, H.-J.: "Realities and Opportunities for Environmental Control. Described by way of the Example of the GDR's Industrially Organized Farm Production," URBS ET REGIO, Kassel 1977.
40. Quix, E. and Kretschmar, H.: "Comparison of International Development Trends for Root Crop Harvesting Machines," AGRARTECHNIK No 1/1983, pp 25-28.
41. Secretariat of the GDR People's Chamber (editor): "The 1976-1980 Five-Year Plan - A Plan for the Benefit of the People and the All-round Strengthening of the GDR," No 1, Seventh Electoral Term 1977, East Berlin 1977.
42. Secretariat of the GDR People's Chamber (editor): "The 1981-1985 Five-Year Plan - A Working Program for the Benefit of the People, for Socialism and Peace," No 1, Eighth Electoral Term 1982, East Berlin 1982.
43. Schnurrbusch, G.: "Protection of the Land in the GDR," INTERNATIONALE ZEITSCHRIFT DER LANDWIRTSCHAFT (1983) 3, pp 251-252.
44. Siegel, P.: "Production Rose and Costs Declined as a Consequence of Performance Comparisons," NEUER WEG No 24/1982, pp 945ff.

45. Schmidt, B. and Butz, A.: "Four Sections with Three Rotations Each," DBZ No 13/1983, pp 6ff.
46. Spindler, B.: "GDR Agriculture in the 1982/1983 Operational Year," ANALYSEN UND BERICHTE No 19/1983, Bonn 1983.
47. Spindler, B.: "GDR Farm Policy by Reform of Farm Prices," ANALYSEN UND BERICHTE No 7/1984, Bonn 1984.
48. State Central Office for Statistics (editor): "Statistisches Jahrbuch der DDR (SJD)," [GDR Statistical Yearbook], series 1965-1983.
49. Uherek, H.-W.: "Central Fodder Processing - One Approach to Rationalization in Pig Production," KOOOPERATION 15 (1981) 3, pp 132-134.
50. Wernicke: "In Rearing, Each Calf Counts," BAUERN-ECHO, 5 January 1983, p 6.
51. Wrangmore, F. and others: "Cure by Diet of Corn Meal," BAUERN-ECHO, 1 December 1982, p 6.

Articles in Newspapers and Periodicals, Some Without Mention of Title or Author

1. "Providing the Upsurge by Our Own Strength," DBZ No 36/1982, p 3.
2. BAUERN-ECHO, 30 November 1973.
3. BAUERN-ECHO, 14 March 1979.
4. DAI No 9, 15 September 1980, p 12.
5. DAI No 3, 15 July 1983, p 6.
6. DAI No 2/1984, p 17.
7. DBZ, 13th year, No 39/1972, p 16.
8. DBZ, 15th year, 17 May 1974, p 9.
9. DBZ, 24th year, No 14/1980, p 13.
10. DBZ, 5 November 1982.
11. DBZ, 11 February 1983.
12. DBZ No 4/1984, p 11.
13. "Custom Made for the LPG," DBZ No 8.1983, p 6.
14. KOOOPERATION 18 (1984) 2, 3.
15. ND, 28 December 1981.
16. "Wind Erosion Restrained in the Havel Region," KOOOPERATION 14 (1980) 1, p 4.

GERMAN DEMOCRATIC REPUBLIC

STATISTICS PROVIDED ON SHIPBUILDING FOR 1984

East Berlin SEEWIRTSCHAFT in German Vol 16 No 2, Feb 85 pp 60-68

[Unattributed article: "GDR Shipbuilding--1984"]

[Text] Today ships and ship equipment from the GDR are proving their worth under the flags of over 50 countries. As transport means for ocean and inland waters, as manufacturing plants for foodstuffs production, as implements of the Technical Fleet and as floating hotels for tourism they provide a thousand times over testimony about the work of 57,000 members of the Shipbuilding Combine VEB. This is to remain that way in the future, too. To this end in 1984 there were also dynamic efforts to meet world market requirements. To this end over 50 percent of the production program was revitalized, use and operating experiences were systematically transferred from one generation to the next and a combine and production structure was further mapped out such that it reacts in a flexible way to world market requirements.

Compared to 1983 the total output of the Shipbuilding Combine VEB in 1984 increased by 104.6 percent in terms of value. The shipyards delivered 67 oceangoing ships in 13 designs with a register tonnage in gross tons totalling 382,023 GT [gross tons] (in 1983: 67 ships with a total of 382,033 GT), of which the foreign trade enterprise for ship commerce of the Shipbuilding Combine VEB sold 66 ships to customers in the USSR, Romania, Liberia and Singapore.

Newly added to production were the "Trailership" series from the Rostock Neptun Shipyard VEB and ship equipment which enhances service value from the nine ship engines and systems building enterprises of the Shipbuilding Combine VEB. The renewal process was consistently continued with the beginning of construction and the keel-laying of the first ships in new series like the "stralsund" 488 factory trawler, railroad freight ferries, the "Equator" multipurpose cargo ships and frozen-cargo trawlers (in this issue on pages 55 to 59 under "GDR Shipbuilding at the 1984 Leipzig Spring Fair and New Developments"). The unity of product and technological development was deepened, the shipyard plants were technologically adapted to the new products and the technological level was raised by the use of 40 additional industrial robots mainly for shaping, joining and preserving processes. In this connection again the development and in-house manufacture

of rationalization means which has been intensified for years within the Shipbuilding Combine proved its worth. The level which was thus achieved is reflected by the MEKID system, which was described in this issue on pages 79 to 93, substantial foreign interest, several export contracts and a volume worth about M60 billion.

Wismar Mathias-Thesan Shipyard VEB

The Wismar shipyard collective achieved the highest annual new construction ever with eight new ships and register tonnage totalling 105,746 GT. Since 1972 the shipyard has been the only manufacturer in CEMA of large refrigerated transport ships (service load 7,460 tons of refrigerated cargo, 13,000 m³ of refrigerated cargo space) for fleet fishing based on a division of labor. Together with Soviet specialists it systematically and successfully transferred construction and operating experiences from the "Polar" prototype of the 1970's to the construction of "Crystal I" and the current design of "Crystal II" of which last year for the first time 5 ships were delivered to the USSR's fishing fleet so that now 42 units of the succession of generations are proving their worth in deepsea fishing in the USSR (37), Romania (4) and the GDR (1).

The "Crystal II" ship type (Photo 1) defines the international state of fleet fishing and annually achieves tonnage productivity of 60,000 to 70,000 tons. The processes of loading and transshipping technology are completely mechanized and make it possible to transship at sea up to 1,000 tons of chilled fish cargo and supplies every day, even under difficult weather conditions. Photos 2 and 3 illustrate--for the first time in SEEWIRTSCHAFT--these maneuvers which require enormous seamen's skill and coordination on the part of the crews.

For ro-ro traffic of the NAVROM Constanta, on 31 October Romania, with the MS [motor ship] "Tutova" took possession of the first of two similar special transport ships of approximately 6,760 tons (Photo 4). In large measure they correspond to the Ro 15 type which was introduced in SEEWIRTSCHAFT No 2, 1983, and on 3 decks utilize about 1,100 m of track and can hold about 290 containers or 470 medium-class automobiles or 167 wheeled trailers.

The proven OBC [ore, bulk, container] series was continued and increased now to 28 with 2 new 24,232 DWT [deadweight tons] ships registered under the Liberian flag.

Because of accelerated investment activity to adapt technological facilities to the construction of railroad freight ferries it was possible on 2 October--2 months earlier than originally planned--to begin construction of the first ferry. The competitive program aims at having the first railroad freight ferry available in April 1986 for testing on the railroad.

Warnemuende Warnow Shipyard VEB

With the awarding of the GDR's highest state decoration to the Warnemuende shipyard collective on 28 September 1984 the constantly exemplary performance

development of a shipyard was honored which since 1957 on up to 31 December 1984 has developed and produced a total of 302 oceangoing freighters in 20 basic designs. In this period the Warnemuende Warnow Shipyard has delivered to customers from 14 countries 222 general cargo and multipurpose ships of 10,070 to 17,330 DWT, 59 bulk cargo and special bulk cargo ships of 7,184 to 19,885 DWT, 18 all-container ships with more than 840 container spaces and 3 multipurpose freighters of the lo-ro 18 type of 17,850 DWT, thus in all 3.2 million GRT/GT and 4 million DWT.

In 1984 10 ships totalling 147,234 GT were delivered to 4 countries. Two additional lo-ro ships, including the MS "Rostov" as the 300th ship, were accepted by Soviet shipping companies (Photo 8).

On 30 June 1984 the Murmansk Shipping Company took delivery of the MS "Anatolii Lyapidevskiy" as the last of 27 special bulk cargo ships of the UL-ESC I/II type which are designed for the highest ice class. On the occasion of the change in registry V. A. Ignatyuk, director of the Murmansk Shipping Company, expressed "thanks to the shipbuilding collective for the very close and fruitful cooperation in the development, construction and testing of this ship series." The ships of this series contribute substantially to having been able to use the western segment of the northern route, the Murmansk-Dudinka route, throughout the year with the assistance of nuclear icebreakers. Often faced with complicated test situations they, too guarantee living and working conditions for six million inhabitants of the economically so important polar region. The USSR's largest and most important nonferrous metal center in Norilsk is supplied and its products shipped out via the polar port of Dudinka.

The 938-TEU-serie of the "Mercur II" type, which was introduced in SEEWIRTSCHAFT No 6, 1983, and produced for Soviet shipping companies, was continued with the MS "Tikhon Kiselev" (Photo 15) as the 7th and the MS "Geroi Monkady" as the 8th unit. Four 17,330 DWT multipurpose freighters of the "Monsoon" type, including the MS "Radebeul" (Photo 9) for the DSR [German Maritime Shipping Company, Rostock] Lines, and a unit which still has to be outfitted increased to 15 the series which was designed especially for the operating conditions of Western shipowners and which was concluded at the beginning of 1985.

Rostock Neptun Shipyard VEB

Eight ship deliveries in 1985 are on the books. As the first ship in a rather large ro-ro series, which has recently been put into production, designated as "Trailer 161," the MS "Kompozitor Kara Karaev" (6,884 GT, 4,673 DWT) was accepted on 9 August 1984 by the Caspian Shipping Company, Baku. Both the Azerbaydzhani shipping company and the building yard opened up totally virgin territory with this oceangoing ship which also traverses the Volga-Balt inland waterways. The maiden voyage of the first in the series led to Rotterdam where pallet cargo stowed on trailers was taken on and to Hamburg where 40-ft containers were loaded on the upper deck, via Leningrad, Lake Ladoga, Lake Onega, the Volga-Balt Canal, the Volga and the Caspian Sea to the home port of Baku.

The very compact ship type which offers maximally rebuilt space, limits the height of permanent ship parts above the waterline (with a 4.00 m draft) to 14.40 m. The masts and antennae which project beyond that are hydraulically tilted over and the tops of the smokestacks are dismantled.

In respect to cargo with wheels the ship type can transport up to 365 automobiles or 84 trucks or 33 road trailers or 105 wheeled trailers of the 20-ft type or 39 wheeled trailers of the 40-ft type. It has three cargo decks (stowage, main deck and upper deck) and a suspended automobile deck in the upper hold which was manufactured by the Neptun Shipyard. The three-part collapsible angular stern ramp (Navire license) has a track width of 5.50 m and closes the 7.75 m x 4.97 m stern door opening. The cargo is lifted to the upper deck via a hydraulically activated 16.0 m x 3.5 m flush-deck design lifting platform and vertically distributed for storage via a 9.5 m x 3.5 m lifting platform. The total track length is 1.4 m. The exhaust gases that develop during loading and unloading are quickly eliminated by changing the air 20 times per hour.

A passive U-shaped stabilizing tank provides the necessary trim for the cargo transfer. The 370-kW lateral thrust units assure smooth mooring and casting off without the help of a tug and sure maneuvering. The draft limit of only 4.00 m requires a twin-screw power unit. Two supercharged single-acting four-stroke ship diesel engines from Halberstadt Machine Building VEB (SKL) of the type MH 6 VDS 48/42 AL-2 (500 rpm) operate on four-blade variable pitch propellers via spur gear reduction gears which were developed by the Rostock Diesel Engine Works VEB.

Three additional bucket-ladder dredgers (dredging capacity 750 m³/hour with water depth of 12 m) were accepted by Soviet shipping companies. The floating dredger type which was introduced in this issue on pages 69 to 78 and was especially designed for heavy soils is manufactured among the CEMA countries only in the GDR which in this special area has gathered enormous construction and operating experiences in 3 1/2 decades.

On 28 December the 53rd and last 12,680 DWT multipurpose freighter of the "Neptun" series was launched. The basic type which since 1970 has been modified several times and adapted to special shipowner desires--the most recent example is the mounting of a Grim guide balde in the MS "Rydal"--is proving its worth under the flags of 16 countries.

Stralsund Shipyard VEB

With the record new construction of 35 frozen-cargo trawler-seiners, of which 32 were exported to the USSR, one general repair, 29 warranty repairs and the pre-production ship whose keel has been laid of the "Atlantic 488" type factory trawler series the Stralsund Shipyard impressively underscored its internationally leading position in fishing ship construction. Thus, from 1981 to 31 December 1984 a total of 60 of the medium-sized catching and freezing ships, which are intended primarily for coastal use within the 200 nautical mile economic zones and are designed for an annual catch of approximately 7,000 tons, were delivered to Soviet deepsea fishing.

The shipyard's series-based construction program is repeatedly symbolic of mutually advantageous socialist economic integration policy. With the 120-m long factory trawler--which embodies the 7th generation of trapping fishing ships which have been built by the shipyard--it attains a dimension which in many respects is new. USSR Minister of Fish Industry Vladimir Kamentsev in an interview on the occasion of laying the keel on 5 December stated that he is convinced of the fact "that at present the factory trawler has no equal in international fishing grounds."

The service characteristics of the factory trawler (see also SEEWIRTSCHFT No 10, 1984, pp 503-505) as compared to the "Atlantic Supertrawler" type of catching and processing ship which was produced until 1983 are being increased by 52 percent. The equipment provides for excellent self-sufficiency (96 days), catching in the open ocean in depths up to 2,000 m and treating the fish until canning production with daily volumes of 26,000 cans.

A new lowering technology has been developed for construction and the basic technology of the shipyard optimized in order to be able to manufacture in the shed protected from the weather the ring volume sections which weigh up to 200 tons. The factory trawler will set the world's standard in its class, will be ready in the first half-year of 1986 after intensive sea tests and will be produced in a large series until 1990. In 1985 24 additional frozen-cargo trawler-seiners will be built and as a modification starting with the 85th ship of the series 12 frozen-cargo trawler it will be built without the ring-seine equipment (Photo 25).

Boizenburg/Rosslau Elbe Shipyards VEB

All nine new ships--the inland water passenger ships "Aleksey Surkov" and "Konstantin Zimonov" as well as seven oceangoing-inland-waterway freighters of the type CBK [container-inland coastal motor ship] 1700 (Photo 26) came into being in the context of long-term orders from the USSR's inland fleet. The economic value of this shipbuilding production for the USSR is illustrated by Dr V. I. Postnikov in the "1985 Yearbook of Shipping" both impressively and bindingly when he writes: "Although freight-carrying inland shipping, which is dependent on the season, has only a modest share in total goods traffic at 4 percent (RSFSR [Russian Soviet Federated Socialist Republic] approximately 6 percent), in the northwest and Volga regions it has a 25 to 45 percent share in the total transport capacities by rail and waterway. Inland waterway shipping is of especially great importance for the High North and Siberia where in many instances up to today it represents the main or even the only means of transport and often plays a role as a pioneer for opening regions up which are rich in natural resources. In the territory east of the Urals, that is, on almost 60 percent of the USSR's total area, so far there has been only about 20,000 km of railroads, but inland waterway shipping here utilizes more than 80,000 km of waterways, and half of the units of the "Container-Inland Coastal Ships" series which were produced by the Rosslau branch, are put into use here. For example, the inland fleet transports for the west Siberian petroleum-natural gas complex 60 percent of all goods, 70 percent for the Norilsk industrial region, about 85 percent

to the Yakut Autonomous Soviet Republic and more than 90 percent to the villages on the Nadym, Pur and Tax rivers. In the future, too, inland-waterway shipping will continue to play its leading role since automobile transports are 12 to 15 times more expensive.

"The basic directions of the USSR's economic and social development in the years 1981 to 1985 and for the period up to 1990 call for a higher rate of development for inland shipping than for railroad traffic and ocean shipping. In line with these decisions goods transport by ocean shipping is to increase by 8 to 9 percent in the 11th five-year plan period, that of the railroad by 14 to 15 percent and by 19 to 20 percent in the case of inland shipping. According to studies by scientific institutions of the RSFSR's Ministry for Inland Shipping this trend will continue unchanged up to the year 2000. While the RSFSR's inland shipping transport volume grew in the 10th five-year plan period by 20 billion tons/km it is to increase by 44 billion tons/km by 1985. In the RSFSR alone in 1985 548 million tons of goods will be transported on waterways. In line with the decisions of the 26th Congress of the Communist Party of the Soviet Union for improved coordination between all transport branches the transport of 24 to 30 million tons is to be shifted from rail to waterway in the 11th five-year plan period; this includes 8 to 11 million tons of petroleum and petroleum products, 5.5 to 7 million tons of coal, 2 to 2.5 million tons of wood goods, 2.5 to 4 million tons of chemical products and potash fertilizers and 2 million tons of cement and other goods. Transports in combined ocean-inland transport without intermediate transshipping will be constantly expanded. The rapid and broadly focused development of the High North, western Siberia and the northeast and the establishment of important territorial-industrial complexes in these regions are producing rapid growth of river transports. The direct transport of goods from the ports of the Siberian rivers to the extended delta region of the Ob and Taz rivers and to the northeast coast with ocean-inland ships is more cost favorable than transporting on the northern sea route."

Table 1. New Construction in 1984 by Shipyard*

Shipyard	Number of Ships	Register Tonnage in GT	DWT
Warnemuende Warnow Shipyard VEB	10	147,234	175,584
Wismar Mathias-Thesen Shipyard VEB	8	105,746	101,918
Stralsund Shipyard VEB	32	60,736	21,504
Rostock Neptun Shipyard VEB	8	52,963	57,142
Boizenburg/Rosslau Elbe Shipyards VEB	9	20,544	12,902
Total	67	387,223	369,050

*only ocean going ships and ocean-inland ships

Table 2. New Construction in 1984 by Ship Types

Ship Type	Number of Ships	Gross Tonnage in GT	DWT
Cargo ships	25	247,641	298,087
--All-container ships	2	35,440	32,060
--ro-ro and lo-ro ships	4	48,913	47,077
--Multipurpose cargo ships	10	125,414	168,504
--Special bulk cargo ships	2	28,018	38,504
--Ocean-inland-cargo ships	7	9,856	11,942
Fishing ships	37	122,651	68,254
--Catching and processing ships	32	60,736	21,504
--Refrigerated ships	5	61,915	46,750
Other	5	16,931	2,709
--Inland passenger ships	2	10,688	960
--Bucket-ladder dredgers	3	6,243	1,749
Total	67	387,223	369,050

Table 3. Share of Product Groups in the New Construction

Product Group	Number of Ships	Gross Tonnage in GT	Gross Tonnage in percent
Cargo ships	25	247,614	64
Fishing ships	37	122,651	32
Other	5	16,931	4
Total	67	387,223	100%

Table 4. Share of Exports in New Construction in 1984

	Number of Ships	Gross Tonnage in GT	Gross Tonnage in percent
Total exports	66	373,666	96
--USSR	56	251,566	67
--Other countries	10	122,100	33
GDR	1	13,557	3
Total	67	387,223	



Photo 1. Five refrigerated ships of the "Crystal II" type were delivered for the first time within 2 years by the Mathias-Thesen Shipyard to USSR deepsea fishing.



Photo 4. Ro-ro ship "Tutova" from the 6,670 DWT series of the Mathias-Thesen Shipyard for the NAVROM Constanta

Photo 1. Five refrigerated ships of the "Crystal II" type were delivered for the first time within 2 years by the Mathias-Thesen Shipyard to USSR deepsea fishing.

Photo 4. Ro-ro ship "Tutova" from the 6,670 DWT series of the Mathias-Thesen Shipyard for the NAVROM Constanta

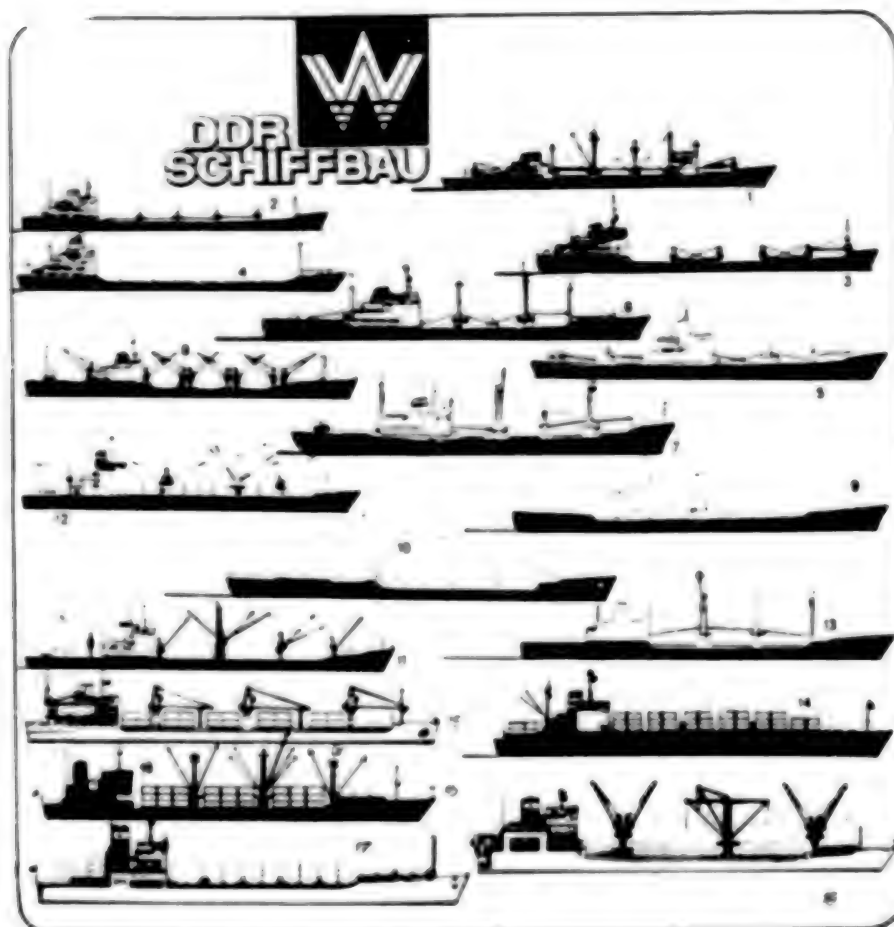


Photo 6. Since 1957 the Warnow Shipyard has developed and produced a total of 302 deepsea cargo ships in 20 basic designs

1. General cargo freighter Type IV
2. Coal-ore freighter I
3. Coal-ore freighter II
4. Bulk cargo ship Type IX
5. Freighter Type X
6. Freighter Type VI
7. General cargo freighter Type XD
8. Freighter Type 17
9. Freighter Type "Pacific"
10. Freighter Type "Ocean"
11. High-speed freighter
12. Multipurpose freighter "Warnemuende"/"Mercator"
13. Multipurpose freighter "Meridian" I/II
14. All-container ship "Mercur I"
15. Special bulk cargo ship UL-ESC I/II
16. Multipurpose freighter "Monsoon"
17. All-container ship "Mercur II"
18. Multipurpose freighter lo-ro 18



Photo 8. 300th new freighter from the Warnow Shipyard since 1957: Lo-ro ship "Rostov"

Photo 9. MS "Radebeul"--a ship of the "Monsum" type for the German Maritime Shipping Company, Rostock

Photo 13. The Balt-Orient Line offers 14-day sailings from Gothenburg to southeast Asia with the all-container ship MS "Tikhon Kiselev" from the Warnow Shipyard

Photo 23. A total of 32 frozen-cargo trawler-selmers were delivered in 1984 by the Stralsund Shipyard to Soviet fishing bases

Photo 26. The Elbe Shipyard VEB Boizenburg/Rosslau (VEB) is building a series of container-inland coastal ships with a DWT up to 1,760 tons. The shipyard is producing 43 ships of this type in 1974 for the Soviet Union.



Photo 27. The 360-person inland passenger ship "30 Years GDR" which was built at the Boizenburg/Rosslau Elbe Shipyards VEB is being transported in drydock to the far eastern operational area (Amur).



Photo 26. The Elbe Shipyard increased its construction program for Soviet inland shipping to 43 ships of the CBK (container-inland coastal ships with a DWT up to 1,760 tons) type

Photo 27. The 360-person inland passenger ship "30 Years GDR" which was built at the Boizenburg/Rosslau Elbe Shipyards VEB is being transported in drydock to the far eastern operational area (Amur)

Schiffsablieferungen des DDR-Schiffbaus im Jahre 1984

Ship Deliveries from GDR Shipbuilding in 1984

(Key follows tables.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Fliegelschiff-Nr.	Bau-Nr.	Schiffname	Schiffstyp	Flaggenstaat	Vermessung in GT (Tragfähigkeit in t)	LL in m	B in m	H in m	T in m	Antriebsanlage	Antriebsleistung in kW	V in km	Beschreibung in „Seewirtschaft“

VEB Mathias-Thesen-Werft Wismar

10. 03. 1984	225	Kaliningradskaja Bereg	Kristall II	UDSSR	12383 (9350)	142,00	22,20	13,60	8,02	K 5 SZ 70/125 BL	7600	17,4	
20. 04. 1984	226	Umsarjyskaja Bereg	Kristall II	UDSSR	12383 (9350)	siehe „Kaliningradskaja Bereg“ 15							
20. 06. 1984	227	Motovskij Zaliv	Kristall II	UDSSR	12383 (9350)	siehe „Kaliningradskaja Bereg“							
21. 06. 1984	129	Pantella A. Lemos	ODC	Liberia	16704 (24232)	167,40	22,85	14,00	10,46	K 8 Z 70/120 E	8235	16,0	
24. 06. 1984	228	Bereg Junosti	Kristall II	UDSSR	12383 (9350)	siehe „Kaliningradskaja Bereg“							
31. 10. 1984	133	Tutova	Ro/Ro	Rumänien	10243 (6704)	123,00	20,50	14,00	7,23	2x12 VD 48/42 A1-2	2x5205	16,5	2/1983
29. 11. 1984	130	Spyros A. Lemos	ODC	Liberia	16704 (24232)	siehe „Pantella A. Lemos“							
29. 12. 1984	229	Oljstomskij Zaliv	Kristall II	UDSSR	12383 (9350)	siehe „Kaliningradskaja Bereg“							

Insgesamt 8 Neubauten mit zusammen 105746 GT Vermessungstonnage und 101918 tDW Total: 8 new ships with total register tonnage of 104.746 GT and 101.918 DWT.

Schiffsablieferungen des DDR-Schiffbaus im Jahre 1984

Fliegende- Nr.	Bau- Nr.	Schiffname	Schiffstyp	Flaggen- staat	Vermessung in GT (Tragfähigkeit in t)	Lt. in m	B in m	H in m	T in m	Antriebs- anlage	Antriebs- leistung in kW	v in kn	Beschrei- bung in „Seewirt- schaft“
1	2	3	4	5	6	7	8	9	10	11	12	13	14

VEB Warnowwerft Warnemünde

26.01.1984	248	Eastern Moon	Monsum	Liberia	12811 (17330)	140,00	23,05	13,40	10,18	K 7 Z 70/120 E	6000	17,0	9/1979
28.02.1984	249	Canopus	Monsum	Singapur	12811 (17330)	siehe „Eastern Moon“ 15							
19.04.1984	477	Tikhon Kiselev	Mercur II	UdSSR	17720 (16000)	163,57	25,40	15,90	9,82	9 D K R N 80/100-4	15842	21,3	6/1983
30.04.1984	250	Wernann Warna	Monsum	Liberia	12811 (17330)	siehe „Eastern Moon“							
31.05.1984	153	Kapitan Nazarev	UL-ESC II	UdSSR	14009 (19252)	154,88	22,80	13,50	9,88	K 8 Z 70/120 E	8235	15,2	10/1982
30.06.1984	154	Anatoliy Lysydevaly	UL-ESC II	UdSSR	14009 (19252)	siehe „Kapitan Nazarev“							
20.08.1984	256	Radabeg	Monsum	DDR	13557 (17330)	siehe „Eastern Moon“							
30.09.1984	122	Rostov	Lo/Ito 18	UdSSR	15893 (17850)	161,00	23,05	13,70	10,02	K 5 8 Z 70/125 R	7000	17,4	10/1984
31.10.1984	478	Gerol Monkady	Mercur II	UdSSR	17720 (16000)	siehe „Tikhon Kiselev“							
29.12.1984	155	Vladimir	Lo/Ito 18	UdSSR	15893 (17850)	siehe „Rostov“							

Insgesamt 10 Neubauten mit zusammen 147 234 GT Vermessungstonnage und 175 984 t DWT. Total: 10 new ships with total register tonnage of 147,234 GT and 175,584 DWT.

Schiffsablieferungen des DDR-Schiffbaus im Jahre 1984

Fliegende- klassifizierung	Bau- Nr.	Schiffsname	Schiffstyp	Flaggen- staat	Vermessung in GT (Tragfähig- keit in t)	L.L. in m	B in m	H in m	T in m	Antriebs- anlage	Antriebs- leistung in kW	v in kn	Beschrei- bung in „Seewirt- schaft“	14
1	2	3	4	5	6	7	8	9	10	11	12	13		

VEB Schiffswerft „Neptun“ Rostock

30. 03. 1984	106	Ivan Bakhvalov	Bagger	UdSSR	2081 (583)	80,17	14,40	5,20	3,75	8 NVD 48 A-2	970	9,0	2/1985	
06. 04. 1984	449	Dirk	Neptun-421	Singapur	8087 (12080)	140,67	21,00	11,30	9,05	8 NVD 48 A-2 MH K 92	735 6020	10,6	2/1980	
29. 06. 1984	107	Blivash	Bagger	UdSSR	2081 (583)	siehe „Ivan Bakhvalov“				00/105 E				
25. 07. 1984	450	Merkur Delta	Neptun-421	Liberia	10383 (12080)	15	siehe „Dirk“							
00. 08. 1984	101	Kompositor Kara Karasov	Bo/Ro	UdSSR	6894 (4673)	117,50	16,20	7,25	4,00	2xMH 6 VDS 48/42 A1-2	2x2050	15,7		
28. 10. 1984	451	Merkur Beach	Neptun-421	Liberia	10383 (12080)	siehe „Dirk“								
15. 11. 1984	108	Severnaja Dvina	Bagger	UdSSR	2081 (583)	siehe „Ivan Bakhvalov“								
29. 12. 1984	452	Rydal	Neptun-421	Liberia	10383 (12080)	siehe „Dirk“								

Insgesamt 8 Neubauten mit zusammen 55963 GT Vermessungstonnage und 57142 tDW Total: Total: 8 new ships with a total register tonnage of 52,963 GT and 57,142 DWT.

Übergabe- datum	Bau- Nr.	Schiffname	Schiffstyp	Flaggen- staat	Vermessung in GT (Tragfähig- keit in t)	L L in m	B in m	H in m	T in m	Antriebs- anlage	Antriebs- leistung in kW	Anteil- v in %	Beschrei- bung in „Seewert- schaft“
1	2	3	4	5	6	7	8	9	10	11	12	13	14

VEB Volkswerft Stralsund

10. 02. 1984	629	Oredeth											
09. 02. 1984	630	Ovoryskoye											
22. 02. 1984	631	Odistanovo											
09. 03. 1984	632	Olesino											
20. 03. 1984	633	Oushkin											
28. 03. 1984	634	Oreanda											
31. 03. 1984	635	Oscarichi											
31. 03. 1984	636	Olesak											
17. 04. 1984	637	Osary											
27. 04. 1984	638	Oskovka											
30. 04. 1984	639	Orsk											
16. 05. 1984	640	Oryev											
30. 05. 1984	641	Oriovka											
31. 05. 1984	642	Oikbovka											
31. 06. 1984	643	Oloy											
28. 06. 1984	644	Osha											
30. 06. 1984	645	Oshchye											
18. 07. 1984	646	Orkhovi											
26. 07. 1984	647	Odayev											
31. 07. 1984	648	Oryal											
17. 08. 1984	649	Oksitka											
24. 08. 1984	650	Oksrem											
31. 08. 1984	651	Olsko											
20. 09. 1984	652	Olsheva											
28. 09. 1984	653	Olginka											
30. 09. 1984	654	Olskan											
17. 10. 1984	655	Omsko											
28. 10. 1984	656	Ogsvka											
31. 10. 1984	657	Olskana											
15. 11. 1984	658	Oshereye											
22. 11. 1984	659	Olyka											
07. 12. 1984	660	Omskak											

Frozen-cargo trawler, seiner

Getrier- trawler- Seiner	Udskan (672)	55,00	13,50	9,20	4,80	2 X 3 VD 26/70 AJ-2	2 X 682	12,5	2/1982
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Insgesamt 32 Neubauten mit zusammen 40726 GT Vermessungstonnage und 11804 tdr Total: 32 new ships with a total register tonnage of 60.736 GT and 21.504 DWT.

Überge- datum	Bau- Nr.	Schiffsname	Schiffstyp	Flugze- leat	Verma- lung in OT (Tragfähig- keit in t)	L.L. in m	B in m	H in m	T in m	Antriebs- anlage	Antriebs- leistung in kW	in km	Rechre- lung in „Seewirt- schaft“
1	2	3	4	5	6	7	8	9	10	11	12	13	14

VEB Elbewerften Boizenburg/Redlau

29.02.1984	307	STK-1005	CBK 1700	U439R	1408 (1708)	79,10	11,00	4,00	3,44	2x8 VDS 30/24	2x441	21,0 km/h	
10.04.1984	308	STK-1006	CBK 1700	U439R	1408 (1708)	siehe „STK-1005“ 15							
31.06.1984	309	STK-1007	CBK 1700	U439R	1408 (1708)	siehe „STK-1005“							
29.08.1984	311	Altksej Surkov	Binnenfahr- geschiff	U439R	5344 (480)	122,43	16,00	4,50	2,00	EO 70-3	733	25,3 km/h	2/1984
31.07.1984	310	STK-1008	CBK 1700	U439R	1408 (1708)	siehe „STK-1005“							
30.08.1984	311	STK-1009	CBK 1700	U439R	1408 (1708)	siehe „STK-1005“							
30.09.1984	312	Konstantin Simonov	Binnenfahr- geschiff	U439R	5344 (480)	siehe „Altksej Surkov“							
11.10.1984	312	STK-1010	CBK 1700	U439R	1408 (1708)	siehe „STK-1005“							
20.12.1984	313	STK-1011	CBK 1700	U439R	1408 (1708)	siehe „STK-1005“							

Insgesamt 9 Neubauten mit zusammen 20544 OT Verma- lungstonnage und 12902 kW Total: 9 new ships with total register tonnage of 20,544 GT and 12,902 DWT.

Key to tables "Ship Deliveries from GDR Shipbuilding in 1984"

1. Delivery date
2. Yard Number
3. Ship's name
4. Ship type
5. Registry
6. Tonnage in GT (DWT)
7. L_L in m
8. B in m
9. H in m
10. T in m
11. Power unit
12. Power output
13. Speed in knots
14. Description in SEEWIRTSCHAFT
15. "see..."
16. Shipyard

12,124

CS0: 2300/368

HUNGARY

ENTERPRISE LIQUIDITY PROBLEMS SEEN AS NATIONAL EPIDEMIC

Budapest MAGYARORSZAG in Hungarian 19 May 85 p 24

[Article by Istvan Garamvolgyi: "Queues At the Bank, More Notorious Non-Payers, Ripple Effect"]

[Text] As the phenomenon "gained strength," newer and newer definitions came into use: laxness in paying discipline, delayed payment, temporary or chronic insolvency, lack of collateral, standing in line. In economic life the term "standing in line" sounds foreboding. The definition "enterprises standing in line," created by people working in the financial field, only makes a shy reference to the fact that a significant number of economic units are short on collateral coverage, are unable to meet their payment obligations on time, and their partners and suppliers are therefore lining up according to the dates of their bills, obliged to furnish further loans to the enterprises until there is enough money in the accounts of the latter to facilitate payment.

Weak, Strong

Lining up is contagious. If a few dozen firms make their suppliers wait and pay their bills months late, sooner or later even the initially blameless partners pick up the habit of paying late; they will also spread the infection and its consequences. At the end of 1982, 85 enterprises stood in line for extended lengths of time in order to collect 15 billion forints worth of overdue debts; a year later 167 enterprises and 34 billion forints, while at the end of 1984, 159 enterprises and 28 billion forints were involved, including 60 firms which waited for more than 6 months. On a nationwide scale, the size of enterprisaal money shortage is indicated by the fact that more than 10 percent of the enterprises are unable to pay their domestic partners and suppliers within the deadlines set down in the contracts.

Since we are talking about money and payment conditions, it appeared at first that the rules of inter-enterprise money transfer are the primary cause of problems. It hardly requires proof that in Hungarian economic life--even today--the supplier's position is generally stronger, up until the signing of the contract. Exactly for this reason, the regulations concerning the methods of payment, based upon the financial autonomy of the enterprises, consciously attempt to strengthen the position of the buyer. It is a general rule that he may raise objections to the quality or other aspects of the delivered goods

within 8 days after delivery, and that payment must be made not later than 30 days following delivery.

And, even though payment can be made by check or in cash, the two most frequent methods of payment were the transfer of funds--initiated by the buyer--or the mandate for collection. In using the latter method, until 1976 the bill of acceptance was the decisive document. However, since the enterprises frequently "forgot" to acknowledge delivery, thus delaying payment, regulations concerning this method of payment have been modified. The financial institution handling the account considers the buyer's silence as acknowledgment of receipt.

If enterprisal money management and the supply of free capital are well balanced, these payment methods could function without problems. Of course, it cannot be denied that in the choice of payment methods the interests of buyer and supplier differ. It is more favorable for the buyer to utilize the transfer of funds method--pending notification by the buyer--while the supplier prefers to be authorized to collect funds at his own initiative. In the case of transfer of funds payment, the maneuvering room of the buyer is further restricted by the fact that, having received no payment, the supplier can collect by using an "in Lieu of Payer's Transfer" designation on its authorization to collect funds.

Confidential Blacklists

The time limit within which claims can be made and the payment deadline are similar in both methods of payment. In spite of this, enterprises do not value the two methods equally--with good reason. This is particularly evident in the case of agricultural cooperatives. As suppliers they generally deal with monopolistic or at least very strong organizations, and therefore, they are forced to utilize the transfer of funds method of payment. As buyers, on the other hand, they are generally--in two-thirds of the cases involving purchases--compelled to accept the method of authorization to collect. The correlation between economic power and method of payment is even more emphatic in the business contacts of ancillary industries and small enterprises.

An additional factor about the regulations on money transfer; in order to prevent problems in settling the accounts between the enterprises, banks inform their clients about the solvency of their partners. There is no great utility in this, because banks only answer the following question: Did a certain enterprise fulfill its payment obligations promptly or with delays during the past year? The firms posing this question usually know the answer from experience. There are payment guarantees, too: certification of reserves, bank guarantees, or the use of consigners. The amount covering future payment demands can be separated; the bank, or another economic unit can act as consigner. The only thing we can say about this is that only a small fraction of actual--i.e. actually completed--inter-enterprise payments are guaranteed in this manner. With a little imagination, we can visualize the scene in the course of which the representative of a small firm requests payment guarantees from a large enterprise. Personal acquaintance and contact are much more effective: The money manager of a certain firm calls up his counterpart at

an enterprise which purchased something from them. "Look, our account is empty, do something!" Based on this, even though the other firm is not doing better, the person thus approached will request a special payment to be made to the supplier firm. The bank will comply with this request, using the income of the next day.

The circulation of money between enterprises and the fulfillment of payment obligations resulting from the exchange of goods and services have not been without problems during the 1970s either. At times, payment discipline deteriorated; at other times it improved somewhat, and the number and combined value of delayed payments fluctuated accordingly. Payment discipline was never perfect. It was considered critical or satisfactory in accordance with the disturbing influence it exerted upon the money management of the partners.

During the past few years, we have encountered a new deterioration of payment discipline, more serious than those detected earlier. The designation "chronically waiting enterprises" implies that we are talking about firms and management units which are incapable of payment. There are enterprises whose account does not contain enough money to cover the upcoming wages; in their case, the Hungarian National Bank, for reasons which are far from economic, will extend wage credits to them.

Due to the contacts between suppliers and buyers, everyone in fact knows who is not capable of paying. Supposedly there are blacklists circulated by enterprises among their store managers, with the instruction that firms appearing on the lists are required to pay cash for their purchases. One can only describe the enterprises incapable of payment; to name them would be considered discrediting. Paradoxically, these firms are already without credit.

During the past year, nearly 300 enterprises and cooperatives, from various branches of the Hungarian economy, closed their accounts with losses. Some of them did the same during the previous year, too. In addition to poor management and low efficiency, some of the enterprises' financial situation and paying ability can be ruined by extreme indebtedness and the obligations connected with servicing outstanding debts. After all, payment obligations have their own hierarchical structure: first are debts owed to the state, the national budget; after those follow bank credits; among miscellaneous payments the most urgent is the payment of wages; and only after these comes the satisfaction of the suppliers demands, if there is any money left.

This then is the group of firms operating at low efficiency, repeatedly encountering losses, and among them we can find those enterprises which are chronically incapable of paying and are chronically "standing in line." In their case, due to reasons mentioned above, the source of revolving capital, which is supposed to finance the operating costs of production, has disappeared. At the same time, the current costs of production are rising, even if the volume remains constant.

Even at the level of the enterprise, the financial situation reflects upon the economic situation, the quality of management. Whenever an enterprise is faced with chronic financial problems, the root causes should be sought in the areas of production, management and marketing. Without debating this truism, it also appears to many people that the money supply of the economy--the enterprises' own resources and the available credit--is also insufficient. For one thing, a significant portion of resources ends up in places where they will be "utilized" in an inefficient or loss-producing manner e.g. budgetary subsidies, credits for wages or occasional loans extended to enterprises in order to ease their inability to pay. During the last year, the bank provided this type of injection on two occasions. At the same time, money policies which are comprehensively restrictive in nature have deprived the enterprises of a significant portion of their free financial resources, and separate deductions primarily harmed those firms which manage their affairs efficiently.

Lifesavers

The 1985 innovations in fiscal regulations use monetary means to alleviate financial problems which are caused by the firms' chronic inability to pay or their need to stand in line for long periods, and are exaggerated by the ripple effect of these actions. Commercial credits and credit certificates between enterprises are now legally accepted. Another innovation is the credit against a firm's current account; the sum of this, together with daily incomes, can be utilized to make outstanding payments.

12588

CSO: 2500/397

HUNGARY

DIRECTION OF CREDIT SYSTEM'S FURTHER DEVELOPMENT DISCUSSED

Budapest KOZGAZDASAGI SZEMLE in Hungarian No 4, Apr 85 pp 447-455

[Article by Dr Mrs Bela Dudas, staff member of the National Planning Office:
"Directions of the Credit System's Further Development Under the 7th Five-Year
Plan"]

[Text] Within the system of economic management as a whole, also the credit system will be developed further under the 7th Five-Year Plan, in part for internal reasons (to eliminate the shortcomings experienced in the course of the present credit system's operation), and in part to adjust to the economic-policy objectives and to the other elements of the system of regulation.

Changes are necessary for these reasons primarily in the system for the credit financing of current assets.

1.0 Assessment of Present Credit System

The system for the credit financing of current assets has been in operation since the 1968 economic reform, with only minor changes. The most important requirements that this system must meet are as follows:

- The active influencing role of credit must be strengthened. Credit must signal the economic stresses and bridge temporary liquidity problems.
- Credit should be available only to creditworthy enterprises.
- Credit must encourage the enterprises to keep the formation of their current assets within economically warranted limits, and to obtain payment of their receivables within reasonable time.
- Credit should resolve only up to a reasonable limit the difficulties stemming from mismanagement (with due consideration for the creditor's protection as well).
- Short-term credit must not be used to finance assets that are committed long term.

Within certain limits to be discussed in greater detail below, the credit system meets these requirements. In addition, the credit system assumes also a

certain income-regulating, purchasing-power-influencing function: by tying down the enterprises' development funds, it contributes toward limiting the effective demand for investments. In the course of this, by controlling compliance with the regulations on self-financing and enforcing them, the lending bank exceeds the limits of traditional banking activity. We will not go into a detailed analysis on this occasion, but the fact remains that the credit system fulfills this task practically to the maximum: a tangible buildup of inventories leads to an increase of working capital by practically the same amount, and to borrowing to advance this increase. (See Table 1.)

Table 1. Inventory Buildup and Its Financing in 1980-1983 (billion forints)

Year	Inventory buildup	Mode of financing		
		Direct increase of working capital	Intermediate-term credit	Jointly*
1980	14.8	10.7	6.0	16.7
1981	20.5	9.2	5.3	14.5
1982	20.6	10.5	8.1	18.6
1983	20.8	11.0	6.1	17.1

*The discrepancy is due to so-called correction items, and--under the different system of financing domestic trade--to the availability of other permanent enterprise assets as a source of financing.

I will not analyze on this occasion the positive features and effects of the credit system that has been in operation since 1968. Instead, I will dwell on the unfavorable phenomena experienced in the course of the credit system's operation, because these are the internal reasons that necessitate the credit system's further development and also determine the direction of the changes.

1.1 Declining Share of Bank Credit

The credit system and lending practices that have been in effect since 1968 are based on the principle of self-financing. Which means that an enterprise must finance any actual increase of its permanently committed inventories (or current assets) with working capital formed from its own development fund or, if this fund is insufficient, with intermediate-term credit that advances the necessary working capital. The share of credit in the financing of current assets has been gradually declining (see Table 2), due to the primacy of the enterprise's increasing its working capital, to financing regulations that are tailored to this principle, to the various restrictions on lending and, last but not least, to the increasing availability of other enterprise resources.

It should be noted, however, that the shares of credit financing shown in Table 2 apply to the total volume of credits outstanding granted the enterprises that maintain permanent credit relations with the bank. These enterprises account for 39 percent of the total number of enterprises, but their economic significance is substantially greater, because they hold 74 percent of the nation's total inventories.

Table 2. Role of Total Credits Outstanding in Financing Current Assets
(billion forints)

	1967	1970	1975	1980	1981	1982	1983
Current assets (on 31 Dec)	322	355	584	957	1064	1169	1246
Total credits outstanding (on 31 Dec)	117	93	88	138	147	156	165
Share of total credits out- standing in financing current assets (percent)	36	26	15	14	14	13	13
Of which:							
Total intermediate-term credits outstanding (on 31 Dec)	28	47	44	28	27	26	27
Share of total intermediate- term credits outstanding in financing current assets (percent)	9	13	7	3	3	2	2

In addition to enforcement of the requirement of self-financing, the following factors have also contributed to the declining share of bank credit:

- Within the enterprises' resources, the other internal resources have increased steadily, and among them primarily the past due accounts payable to suppliers.
- Each year the grants of working capital to the enterprises from the state budget, for economic and other consideration, have been considerable (between 10 and 12 percent of the increase in working capital).

Under these circumstances the credit system and the regulations on lending are able to influence the development of inventories only to a limited extent: partially because the share of credits in financing current assets is declining; and also because, for an increasing proportion of the enterprises, credit is no longer a source of financing a buildup of inventories. Proof of this statement is also the fact that only a weak correlation exists between the movement of current assets (inventories) and credits. In the opinion of some, it is therefore questionable that enterprises could be influenced at all from the side of credit supply (by tightening credit). In the opinion of others --and the present author shares this latter view--the very fact of providing credit, flexible lending practices geared to the borrowing requirements, and the price of credit (the interest on it) do indeed influence the management of current assets very strongly. If credit assumes a role at a wider circle of enterprises, also the scope of the bank's influence would broaden, and interest would serve more widely as an incentive.

1.2 Shortcomings of Measuring Methods

Practice has demonstrated that it is not possible, with the methods employed up to now to measure the buildup of inventories (or current assets), to take adequately into consideration the specific conditions of individual enterprises and the different business events, because we are measuring the buildup rigidly on the basis of the balance-sheet report, for a whole calendar year, whichever (the average or the minimum) method we use. As a result, it often happens that

the enterprise is forced to finance with its working capital also inventory (or current asset) increases that are only temporary and could be financed with some other, legally available enterprise resources or with bank credit of a temporary nature. The system strives to alleviate the resulting shortcomings by allowing corrections. The essence of corrections is that a buildup of specified inventories does not trigger the obligation to increase the enterprise's working capital and may be financed with short-term bank credit instead. (The long list of correction items, even though all are warranted, hampers and complicates credit financing.)

1.3 Problem of Development Fund's Capitalization

From the basic principle of the system of financing (that any buildup of inventories must necessarily lead to an increase of working capital) it follows that the enterprises' working capital has been increased by more than what would have been warranted. (Because it is not of any definite significance from the viewpoint of our subject, on this occasion we will not dwell on that part of the increase of working capital which stems from state grants of working capital, or from the repayment of earlier credits to supplement working capital.)

In their capitalized form, enterprise resources for capital stock formation no longer influence enterprise decisions. If an enterprise builds up surplus, idle inventories and is therefore obliged--under the present regulations on financing--to increase its working capital, once it has done so it will no longer have any direct interest in mobilizing these inventories, because only under certain conditions would it be able to transfer back to its development fund the proportion of its working capital freed by mobilizing the idle inventories.

1.4 Set of Conditions for Creditworthiness

Creditworthiness has become an important element of the credit system since the economic mechanism's reform. The three requirements for creditworthiness are: regular sales, profitable operation, and regular solvency and willingness to pay. However, credit may be approved even when these requirements have not been met, provided the bank regards the credit secured in some other way (by suretyship, a bond or guaranty).

As a prerequisite for and the determining factor in establishing credit relations, creditworthiness in recent practice does not always assert itself in accordance with the criteria: often the lending subdivisions of the bank rate as creditworthy even enterprises coping with permanent insolvency, and provide financing for them. Consistent assertion of creditworthiness has been undermined also by various high-level government decisions that practically order the bank to provide credit.

In view of all this, the set of conditions for creditworthiness must likewise be developed further, specifically in such a way that creditworthiness (its existence or absence) will be reflected also by objective and measurable indicators. The proposed new criteria for the evaluation of creditworthiness would eventually serve as considerations (or recommendations) for the banks that will provide loans on a commercial basis.

2.0 Credit System's Further Development Necessitated by Changes in Economic Management's Elements

From the viewpoint of the credit system's further development, the determining features of economic management are as follows:

- Primarily market competition, and the regulating elements transmitting it (price system, system of income regulation, system of regulating wages and earnings), must compel the enterprises to operate efficiently (and within this, to manage their assets efficiently).
- Further development of enterprise independence is warranted in the direction of allowing the enterprises to decide, on the basis of profitability considerations, how to use the incentive funds they have formed.
- The credit system must be freed of tasks that other regulating elements are able to perform more effectively (e.g., regulation of the effective demand for investments).
- The planned introduction of the enterprises' capital incentive, and of the uniform management of their assets, will unify the currently separate parts of enterprise assets (and the different enterprise funds), which will help to ensure the prerequisites for the uniform financing of development.
- Credit must regain its utilizable traditional role in capital redistribution, through the extension of credits of a permanent nature. Furthermore, a maximum proportion of bank credit must be established that is higher than the present one, may be divided, and is less burdened by renewals. This, too, would strengthen the selective nature of extending credit.

In the course of the credit system's further development, we should strive to resolve the present system's long-experienced shortcomings, taking care to ensure that it forms a consistent system with economic management's other regulating elements. The following conceptions have evolved on how to fulfill this task.*

2.1 Uniform Management of, Approach to, Assets

Different rules apply at present to the financing of fixed, respectively of current assets, and their funds are managed separately. But the basic conditions for obtaining credit to advance investment capital and working capital respectively are essentially similar: both types of credit presuppose that the enterprise has development (internal) resources of its own, both serve to supplement these resources, and both advance the enterprise's incentive fund that will be formed in the future.

The adopted measures regarding the uniform management of assets will be introduced foreseeably as of 1986. According to these measures, the resources that

*In formulating the basic principles of the proposed new credit system, I am relying primarily on the theoretical conclusions of Dr. János Csángó.

the enterprises retain (the incentive fund after taxes) will no longer be managed as funds. The enterprises' incentive from then on will be linked to increasing their capital, regardless of what specific forms it assumes.

The uniform management of assets and the further strengthening of enterprise independence presuppose that the enterprise will be free to decide, with due consideration for economic efficiency, how it will use its retained earnings: whether to augment its fixed or working capital, hold its retained earnings on deposit as a reserve, or lend or transfer them permanently to another enterprise.

From the viewpoint of the national economy, it is not indifferent in what form the increase of the enterprise's assets manifests itself: whether in tangible form or in cash. Therefore the accumulation tax introduced in 1985 will encourage the enterprise to undertake only development projects that are truly profitable (ones that offer also an entrepreneurial profit, over and above the depreciation and interest); and if such development projects are not possible, then to place their assets in reserve as cash, or to invest them in other areas that offer a suitable rate of return.

A uniform approach to assets could provide the prerequisites also for the uniform financing of enterprise capital formation. Financing could be made uniform by abolishing within development credits the different treatment of investment credits, respectively of credits for the financing of current assets. The bank would review the enterprise's development projects and its related borrowing requirements comprehensively, whereby the differentiation of credits would be warranted only on the basis of their maturity.

2.2 Uniform Set of Conditions for Extending Credit

The outlined uniform financing under the new credit system will require a uniform set of conditions for approving credit applications, specifically criteria that are objective, measurable and hence comparable. The obvious solution is to adopt for this purpose the comprehensive set of indicators that the World Bank employs in its lending practice. The indicators in this set are as follows:

a. The liquidity ratio reflects the ability of the investigated enterprise to meet its short-term obligations. This indicator sets the requirement that the value of the borrowing enterprise's current assets (cash, securities, inventories, accounts receivable, and all assets that can be converted into cash within 12 months) must exceed in a specified ratio the value of its current liabilities.

b. Debt-servicing capacity provides information about the enterprise's ability to repay its debts. It tells us to what extent the enterprise's incentive fund, including also the depreciation for the given year (or years), covers the development-related payments of principal, interest and charges due in the given year (or years).

c. The ratio of debt to net worth presupposes a certain ratio of the enterprise's liabilities payable in more than one year, to the enterprise's own assets.

The computations performed so far on the basis of the enterprises' balance sheets show higher values in every branch of the economy than the World Bank's minimum requirements for lending. The computations also indicate that, for example, the ratio of debt to net worth is very small in Hungary; and that determination of liquid assets is very difficult, due to the problems of determining or screening out the value of depreciated idle inventories that are difficult to move, and of uncollectable accounts receivable.

The domestic application of the indicators still requires computations, but it is already becoming evident that it will not be warranted to set different values for the minimum requirements by branches of the national economy. Not even if some of the enterprises eventually fail to meet the minimal requirements for the third indicator, the ratio of debt to net worth, which is examined from the viewpoint of how secure the credits are. If economic considerations warrant the development of the activity of such enterprises, the decision-maker in the given case will have to ensure the condition of creditworthiness, by providing additional capital.

2.3 Capital Reallocation and Credit

The policy guidelines for the further development of economic management include, among other things, the task of reallocating capital through bank credit. Typically the practice of capital circulation to date has been the centralization of resources from enterprises into the state budget, so that the state may permanently reallocate the same resources to other enterprises. The experience gained from the practice of permanently reallocating capital is that income already capitalized no longer offers an incentive for the enterprises and is difficult to move. This experience confirms the view that it is not expedient to continue to influence capital circulation predominantly through central measures. Under our economic conditions, however, capital circulation cannot be entrusted to the spontaneous action of market forces either. In the course of realizing capital circulation, therefore, it is expedient to insert credit as a transmitting link. This represents a qualitative change in credit's role of bridging differences in time, enabling credit to perform tasks of capital allocation in space as well. According to preliminary ideas, the sources for extending permanent credits could be ensured in two ways:

-- In the wake of the increased differentiating role of price regulation and income regulation, more income will be generated in the sector of the national economy (or at the enterprise) that operates truly efficiently, and it will be in the national economy's interest to develop the activity of this sector (or enterprise). The enterprises unable to invest their capital efficiently will want to lend their capital to other enterprises, or to keep it on deposit with their banks. By recycling these savings into the economy, the banks will thus play a greater role in making capital circulation, and hence also the production structure, more efficient.

-- The other source of permanent credits could be the capital freed in the course of a capital adjustment that is controversial in many respects. A systematic capital adjustment is necessary for the following reasons: First, because there was unwarranted differentiation among the enterprises when their initial capital was determined in the course of the 1955 capital adjustment.

Secondly, because the financing regulations differed by sectors, especially in the years following the economic reform's introduction, and this became a further source of the widening differences. And thirdly, because the price system that was in effect until 1980 resulted in that the enterprises' (sectors') ability to generate income, and hence also their opportunities for development, were not always in harmony with the given enterprises' (sectors') needs for additional investments.

The present author does not venture to expound this subject more fully or to outline how a capital adjustment can be carried out, but in the following the new credit system is based on the assumption that some alternative of capital adjustment will be realized before the 7th Five-Year Plan's start. The capital withdrawn or freed in the course of the capital adjustment would be the other source of permanent credits.

In these two ways it will probably be possible to uncover sufficient resources to solve a part of the enterprises' demand for additional capital, and to improve the situation of the enterprises lacking sufficient capital. In the financing of the enterprises, the capital-supplementing credits would be permanent liabilities, but the bank would review from time to time whether they were necessary.

By providing credits to supplement capital, the active regulating role of credit would be strengthened, and expansion in accordance with the desirable objective of the national economy (when the dynamically growing enterprises, whose development projects improve the economy's structure, finance with capital-supplementing credits a part of their requirement for additional development resources) or contraction could be achieved.

It would be possible to finance with capital-supplementing credit the entire capital requirement of activities that primarily serve national-economic objectives and are specified in the current economic-policy guidelines (hard-currency export, for example). Furthermore, permanent credits could replace a part of the substantial amount of working-capital grants that are being provided each year for business, economic or other considerations. Such credits could be the means by which banks participate in business ventures, to augment their profits.

Both the bank and the enterprise would be able to propose a reduction or cancellation of capital-supplementing credit, as follows:

-- If the bank found that the preferential objective or activity at the enterprise had ceased or had been realigned. In this case the invested money could be recovered, or the capital-supplementing credit ended, by permanently reducing the enterprise's assets (or inventories), discontinuing the preferential activity or, as a last resort, by liquidating the enterprise (putting its assets up for sale).

-- If the enterprise was unable to invest its development resources favorably and wanted to rid itself of the burden of paying interest on the credit.

2.4 Types of Credits to Finance Increases of Assets

Enterprise earnings unalterably remain the primary source of the enterprise's capital formation efforts. The new credit system is based on the principle that the enterprise itself determines the permanent level of its fixed and working capital, that it is free to choose their sources of financing, and that oversight of the enterprise's finances by the bank can be discontinued. The enterprise turns to the bank for credit when it is unable to find another source of financing for an increase of its assets; in other words, when the increase of its capital stock, its other internal (called-in) resources, available commercial credit, borrowed development fund, money raised through bond issues, etc. are not enough to finance an increase of its assets. To supplement its internal resources and the available other sources of financing a permanent commitment of assets, the enterprise can apply for and obtain a credit against its earnings in future years, or in certain instances (as outlined above) a capital-supplementing credit.

From the preceding it follows that, under this system of financing, also the consequences will be reassessed of an increase in assets that triggers a borrowing requirement for a term longer than one year. When extending credit, the creditor must consider whether the borrowing requirement actually stems from a permanent increase of assets or is not related to a change in the required amount of permanent capital (for example, the borrowing requirement is related to the financing of prime contracting of substantial value, to a gradual reduction of surplus inventories, or to a business-policy decision whose effects will cease in a year or two, and its increased assets will then drop to the desired level).

In the first case the bank may advance the increase of capital by approving a credit against future earnings or a capital-supplementing credit. In the second case the bank may approve an intermediate-term credit that the enterprise can repay from current revenue generated by the liquidation of its assets.

2.5 Limit on Extending Credit for Capital Formation

In this credit system the volume of credits that may be extended to finance capital formation is limited quantitatively by the volume of loanable funds that the bank is able to obtain (taking into consideration also the bank's capital that can be mobilized through capital reallocation by means of credit), and by the enterprises' borrowing capacity.

At the enterprises, the limit on extending credits to finance capital formation (credits against future earnings, and capital-supplementing credits) could be the maintenance or possible improvement of the ratio of net worth to total assets. (The components of net worth in its present structure are: fixed capital, working capital, incentive fund, share capital, and portfolio of loans to other enterprises.) For the national economy as a whole, based on the data of the 31 December 1983 balance-sheet reports, the enterprises' net worth was 59 percent of their total assets. Carefully worded regulations (to be drafted later on) will be needed to maintain our overview of the enterprises' financial

situation. The underlying principle of these regulations must be that an enterprise's additional borrowing requirements will not trigger any consequences (refusal of credit, for example) so long as the enterprise operates profitably, meets the indicators that reflect the set of criteria for creditworthiness, and is able to maintain the ratio of net worth to total assets that is prescribed for the sector or the enterprise. (The main consideration in setting the value of this ratio will be the monitoring of how secure the credits are, and of the enterprises' indebtedness.)

2.6 Change in the Internal Structure of Credits

Abolition of the administrative restriction in conjunction with spending financial resources earmarked for development (of the obligation to increase working capital), the enterprises' greater independence in spending their income, and the credit system's modification to adjust to the introduction of commercial credit make it likely that the volume of short-term credits for current assets will increase, while the total of investment credits will decline, due to the credit system's inherent nature. Such a change in the composition of credits is necessary also in the interest of the bank's liquidity and the security of lending. For it is more advantageous from the creditor's viewpoint if credit is used to finance current assets, which can be mobilized more readily.

3.0 Other Questions Pertaining to the New Credit System's Operation

3.1 Commercial Credit

In the wake of the credit system's further development, commercial credit between enterprises is expected to assume a significant role. A new feature of commercial credit will be the ability of the enterprises to use any available idle resources to finance such credit. However, regardless of how serious were the reasons for introducing commercial credit in 1985, it will be able to develop significantly only within the framework of the outlined credit system, because it is not advantageous for the enterprises to employ commercial credit so long as an increase of their inventories financed with such credit obligates them to increase their working capital.

3.2 Credit Renewal

Under the new credit system, with special attention to the progressive role that is intended for credit in capital circulation, it will be necessary to reassess also the practice of terminating disbursed credits at maturity. Besides diluting accountability for the enterprises' developmental decisions, credit renewal leads to inequitable reallocation, because it limits the developmental opportunities of profitable enterprises, for the purpose of improving the situation of the inefficiently operating ones.

In lending, therefore, it is necessary to tighten the practice of renewing credits. The lending bank must show more initiative and act more resolutely in curtailing requests for rescheduling credits and extending their maturity.

3.3 Current-Account Credit

In the wake of their increasing independence, enterprises have been demanding that the bank supply the creditworthy enterprises with money more flexibly and simply. Namely, the enterprises' income and expenditure can never be scheduled so that they are always in exact balance. This is why a minimal availability reserve is necessary to bridge the unavoidable daily imbalances of income and expenditure. Restoration of current-account credit can serve this purpose well. (By the time this article appears, every element of current-account credit will have been worked out. Its introduction in the second half of 1985 will depend on how soon the computer programs for it are written.)

As a means of the continuous availability of funds, current-account credit serves predominantly to free the enterprises of the need to turn to the bank with their minor credit requirements that do not meaningfully influence the course of sales. But by no means negligible is also its effect on reducing the disbursement of credits when the requirements cannot be quantified in advance, thereby freeing the enterprises of interest payments.

The characteristics of current-account credit will be as follows:

- The line of current-account credit is maintained on the giro account. The giro account thereby becomes a peculiar current account on which all financial transactions of the customer are cleared, and the customer may also overdraw his daily credit balance, up to the credit line specified in the current-account credit contract.
- From the viewpoint of its disbursement, the credit is of the revolving type. In other words, it may be used and repaid even in daily varying amounts, within the time limit and up to the credit line specified in the contract.
- The credit line is determined so as to provide a safe availability reserve, and to exceed the lead time that the enterprise needs to meet its foreseeable increased financial obligations.
- Creditworthiness is a condition for extending credit.
- The bank will conclude annual contracts for current-account credit. Separate credit applications will not be necessary each time the credit is used. It will be used by honoring the customer's transfer orders and the claims against him.
- The bank will charge interest on the credit used, at the rate customary in short-term lending, and a commitment fee for the unused credit.

3.4 Relationship Between Enterprise Financing and the Financing of Business Deals

Under the new credit system, there will be no change in how the relationship between enterprise financing and the financing of business deals is viewed. Enterprise financing will remain the basic form of financing also in the future, but the financing of business deals will gain ground. The first steps

in this direction are the introduction of commercial credit and current-account credit, and the retention of separate financing for the enterprises' principal business objectives (seasonality, prime contracting abroad, etc.). The primacy of enterprise financing means that the business deal is judged in the course of examining the reason that triggers the borrowing requirement, but the entire enterprise's present and future financial situation must be the basis of deciding how much credit to extend and for how long.

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CSO: 8125/1464

ROMANIA

ACHIEVEMENTS, PROSPECTS IN CONSUMER GOODS INDUSTRY

Bucharest REVISTA ECONOMICA in Romanian No 16, 19 Apr 85 pp 13-15

[Article by Dr Virgil Dinca: "Results and Prospects in Public Supply of Consumer Goods and Services"]

[Text] The measures of the Program for Regional Self-Management and Self-Supply, prepared at the suggestion and under the direct supervision of President and Party General Secretary Nicolae Ceausescu to supply the public with industrial products, agricultural food products, and services, are important among the RCP and state administrations' efforts to raise the workers' living standard and further improve their quality of life.

Implementation of the provisions of this program in the 1983-1985 period is helping to steadily increase and to improve the quality of the crop and livestock output as well as that of services and of agricultural and industrial consumer goods. In the case of agricultural food products, emphasis is to be placed on improving their structure and quality by increasing the proportion of proteins of animal origin and that of products with a high nutritional content and by diversifying the assortments. This will bring the per capita consumption of the main food products up to the following levels in 1985: about 70 kg of meat and fish products (including about 10 kg of fish), over 200 liters of milk and milk products, about 280 eggs, 185 kg of vegetables, 110 kg of potatoes, 62 kg of fruits, 25 kg of table grapes, etc. In order to meet the requirement for vegetable consumption, every effort must be made to increase the average yields per hectare both of field and hothouse crops and of successive and intertilled double crops, and also to schedule those yields so that the public may eat fresh products for the longest possible period of the year. Structural improvement of the public's diet by increasing the proportion of livestock products makes it possible to keep reducing the consumption of grains for bread, flour and meal. The requirement for public consumption in the hill and mountain areas and in the other localities that do not produce grains is still partially met out of the state reserve. In compensation, the producers in those areas are required to raise and sell to the state reserve equivalent quantities of potatoes, livestock, livestock products and other agricultural products characteristic of the respective areas.

The main consideration that should always govern application of the Program for Regional Self-Management and Self-Supply is that of strengthening the responsibility of the communes, cities and counties for production of the necessary agricultural consumer goods. Every county must be provided with the resources needed for self-supply of the public with bread grains, potatoes, vegetables, fruits, meat, milk, eggs and other products for the production of which it has favorable natural and economic conditions. For that purpose it is the duty of the people's councils as regional plan administrators to make regular efforts to complete programs to develop crop and livestock production in their regional administrative units. As Party General Secretary Nicolae Ceausescu has repeatedly pointed out, they are responsible for the application of all measures specified in the programs for regional development of agricultural production, for the fullest possible exploitation of the productive potential of the soil, and to make highly productive use of the other production means as well as rational use of the agricultural labor force. As regional self-management organs, the people's councils are also entirely responsible for complete deliveries to the centralized state reserve and for procurement of the county consumption reserve.

In order to encourage increased agricultural production, which is basic to consumption, it was decided to use the surplus outputs above the provisions of the programs as an additional reserve, to be used according to law. When the planned weights at slaughter or average yields per animal are exceeded, the death rates lowered, or the birth rates raised, the production gains are used as additional resources for the local consumption reserve.

With this program the party and state administrations have introduced a new conception of use of agricultural production by forming the county consumption reserve and the centralized state reserve of agricultural food products.

The county consumption reserve contains the crop and livestock products needed to supply the nonagricultural population in every locality and throughout the county, as well as the products raised by producers, especially on the private farms, to meet their own needs. The local consumption reserve consists of the respective county's own resources, and it is distributed on the basis of the consumption norms set in order to provide for the supply of the workers and their families and according to their places of work and residences. So that it may perform its stimulating role even more fully, the principle of formation and use of the consumption reserve is to be consistently applied on the level of the communes too, so that every locality, every agricultural unit and every farm in the rural areas will be engaged in this joint effort to increase agricultural food production.

The centralized state reserve of agricultural food products is established by the plan for agricultural development and is intended to supply industry with raw materials, to supply Bucharest and the large workers centers, the mining regions, the worksites important to national economic development, and the points of tourist interest, to supplement the resources for supply of products with unfavorable growing conditions in some counties, and to meet other needs of the national economy. The centralized state reserve is supplied, with priority, out of the output of the large specialized agricultural units.

In conformity with the new legislation on self-supply, the people's councils drew up programs for regional self-supply and agricultural development for each

regional-administrative unit. These programs include specific tasks concerning production, internal consumption, and deliveries of products for the local consumption reserve and the centralized state reserve of agricultural food products. We should mention that the existing livestock numbers and those specified by the end of 1985 make it possible to produce the products needed for both public consumption and other needs of the national economy. The specified consumption of meat requires a concerted effort to increase the livestock numbers and also to conform to the weights at slaughter of the animals. Since a high proportion of the numbers of cattle and sheep are on the farms of the agricultural cooperatives and private producers, the program for self-management and regional self-supply calls for an increase in the quantities purchased from the population to about 13 million hectoliters of cow's milk and 1 million hectoliters of sheep's milk.

Of course the provisions of the program call for measures for the complete and efficient use of arable lands, areas in vineyards and orchards, and pastures and hayfields by all categories of holders of agricultural lands, for effective use of machinery and natural and chemical fertilizers, and for further reduction of inputs of fuels and energy and of material outlays in general. The rural and urban dwellers are required to cultivate the lands they hold completely and to raise livestock and poultry in order to meet their own consumer needs and to contribute to the centralized reserve as well. According to the program for development of agricultural production on private farms, in 1985 each of these farms shall raise an average of at least one cow or five sheep or two goats, one hog, 10 laying fowl, 60-80 cooking chickens, 10-15 rabbits and 5-6 geese, ducks or turkeys. The last livestock census showed that this policy is realistic and quite feasible.

In order to provide properly for consumption of foods rich in proteins and to meet other needs of the national economy as well, it was necessary to plan and adopt some priority programs to develop additional resources of products. Accordingly the program to develop production of rabbit meat was instituted, calling for a supply of 50,000 tons in 1985, which will permit an average annual per capita consumption of 1.5 kg of rabbit meat in cities and one of 2.1 kg in communes. The analyses made in the field showed that steps had been taken to supply all breeders in every county with brood stock from specialized units. The breeding technology is of the extensive, homestead type on private farms and of the intensive type in the socialist agricultural units.

The program to develop fish breeding and fishing in the inland waters and on the Danube Delta is to raise fish production to more than 200,000 tons in 1985 from about 100,000 tons in 1982. For this purpose arrangements are being made to build fish breeding installations on all marshes and lakes and supply the spawn required to modernize the existing hatcheries and start new ones, to raise the proportion of herbivorous fish (eating aquatic vegetation) to 40-45 percent, to improve the breeding technologies, to use some inland rivers (the Prut, Siret, Jiu, Olt, Mures et al.), to develop Black Sea fishing, etc.

The private farms are being aided in poultry raising by the supply of a number of additional chickens above the provisions of the self-supply program in order to obtain some higher yields of meat.

Pursuant to the program for agricultural development the number of bees will reach 2 million families this year, thanks to the measures to expand specialized

farms in the socialist units and to develop apiaries on the private farms. In addition to conservation, expansion, improvement and better use of honey-bearing resources, steps have been taken to provide the needed material base (beehives, equipment, biostimulants, artificial honeycombs, queen bees, etc.).

The program for additional increases in the numbers of sheep and in the yields of wool, meat and milk requires definite measures to increase the flocks and shelters and to provide the needed fodders, with emphasis upon improvement and full use of existing natural pastures and coarse fodders and formation of highly productive cultivated pastures.

In order to supply light industry with the needed agricultural raw materials, it was necessary to institute a program to develop silkworm breeding, calling for an output of 14.8 tons of cocoons in 1985. Along with expanded plantings of single mulberry trees alongside roads and on lands unsuited to agriculture, steps were taken to expand breeding of silkworms that feed on the leaves of oaks and castor-oil plants.

Mushrooms are now being cultivated in Romania on premises of the industrial type and in various local facilities belonging to the state cooperative units and private farms. The program for production of cultivated mushrooms in 1982-1987, calling for an output of 65,000 tons of them in 1987, was drafted according to the party and state administrations' directions. Of that quantity, 48,000 tons will be produced on existing premises arranged for seasonal cultivation (March-May and September-November) and with no energy inputs, and 17,000 tons will be produced in hothouses with production scheduled throughout the year. In order to attain these yields 6,000 tons of mycelium will be supplied by the specialized units and under the direct responsibility of the Research Institute for Vegetable and Flower Growing.

Exploitation of the large quantitative accumulations of the previous years will make 1985 a major stage in the intensive development of agriculture in order to start implementing the priority tasks assigned by the 13th RCP Congress.

Thanks to the development of agricultural production and of the private farms' resources and in accordance with the provisions of the program, in 1985 per capita consumption of meat and meat products will be up 9.7 percent, that of milk and milk products (except butter) will be up 23 percent, that of sugar and sugar products will be up 15.2 percent, that of vegetables and vegetable products will be up 14.3-21.4 percent, that of fish and fish products will be up 110.2 percent, etc. These increases accentuate the trend toward the planned qualitative changes to be made in consumption, representing a new qualitative stage in the continuous rise of the living standard. This will correlate consumption in the two social environments, urban and rural, more closely and will also affect the growing demand for agricultural food products in the state and cooperative trade networks.

The total volume of commodity sales in socialist trade amounted to more than 272 billion lei in 1984, 148.5 billion of which were in foodstuffs and public catering.

Implementation in the current five-year plan of the increases planned for sales of agricultural food products via socialist trade (a general indicator of the

growing consumption of food products supplied by agriculture and the food industry), while the principles of socialist ethics and justice are observed and regional self-supply and self-management are strengthened, raises the critical question of improving the present methods of planning production of the reserve of agricultural food products and its distribution among counties and among localities within the counties, using the average per capita consumptions of the main products, according to the program for scientific public nutrition, as basic elements for the purpose.

Accordingly the central and local trade organs must take steps to make the regional organization, management and planning of domestic trade more flexible, especially on the level of the localities and trade enterprises. In the present stage these objectives as well as other measures vital to the national economy require more intensive regional application of the principles of self-management and self-supply and economic rationalization of relations between the food industry and agriculture, as well as those between those pivotal sectors of the economy and the domestic trade organs, in all stages of planning and plan implementation.

Effective application of the principles of regional self-supply and self-management also requires stronger plan discipline, better correlation of resources with needs on the county level, and a long-term stability between the sources of raw material deliveries and the food industry and between the producers and the beneficiaries of the commodity reserve, as well as a greater role and more functions for the people's councils, which are responsible for the efficient supply of the public or for completion of the county consumption reserves and especially for supplementing them with products for which the production conditions are unfavorable in the county.

As the party general secretary pointed out, consistent implementation of the self-management and self-supply program requires firm measures. Implementation of the program is additionally guaranteed by the fact that its annual provisions are correlated with the plan levels, with the resources in reserves, and with the number of inhabitants. It was also decided to grant lands, especially out of the surplus ones within the buildable limits of localities and unsuited to large crops and mechanized labor, to the public catering enterprises and the enterprises and institutions operating canteens for purposes of planting them in vegetables, potatoes and other plants essential to the diet while supplying the subsidiary farms with fodders in order to diversify menus.

Sustained efforts are also required in order to implement the program provisions on the supply of textiles and footwear, consumer durables, household and domestic appliances, and other industrial consumer goods. At Nicolae Ceausescu's suggestion, more pronounced increases were made in the outputs of garments, textiles, weaves, footwear etc. These provisions are based on the special production programs approved by the party administration for better use of domestic raw materials and of reusable materials and also for more extensive promotion of a varied assortment of substitute overcoats and garments of flax and hemp weaves, shoes with cloth uppers, and other substitutes. At Nicolae Ceausescu's direction special programs have been drafted for seasonal production and delivery in 1985 which will favorably affect the timely formation of the stockpiles needed for trade and especially the satisfaction of the public's requirements and demands.

The Ministry of Light Industry and the Ministry of Domestic Trade have important tasks in connection with production and sales of goods according to grades of quality, and appropriate measures are required in order to provide for deliveries to the trade network, in all cases, of the products contracted for with a high degree of processing, execution, finishing, appearance and packaging and with strict conformity to the contractual quality parameters. It is intended to produce consumer durables in an assortment improved by redesign and modernization, which will contribute to better supply of the public and greater comfort.

In furniture production, it is intended to make multi-purpose, standardized and moduled models that will permit rational use of dwelling space in apartments. The program calls for greater quantities of other industrial goods too, which will better meet the public demands. The Ministry of the Chemical Industry jointly with the Ministry of Agriculture and the Food Industry is to take measures to supply the raw materials needed for regular delivery of the soap and detergent output to the market reserve. The quantities of solid fuels and liquified gases allocated to the market reserve are sufficient for a normal supply of the public. Special measures have been taken at the administration's direction to complete the supply of the public with solid fuels by 30 September 1985.

For further improvement of the public's supply of industrial consumer goods, firm measures must be taken by the producer enterprises and ministries, the Ministry of Domestic Trade, CENTROCOOP [Central Union of Consumer Cooperatives] and the other central organs and local ones engaged in trade to provide jointly with the executive committees of the people's councils for the planned production for the market reserve, for regular deliveries to trade, and for procurement of the entire quantity specified in the plan and contracted for in a diversified varietal structure and of good quality. A better organization of commodity sales in cities and villages will be attempted, as well as intensive use of existing premises, along with measures to enhance the stores' specialization in groups of products in accordance with the volume and structure of the commodity reserve in order to further improve the service to the public and the efficiency of trade operations.

As for services to the public, the Program for Regional Self-Supply and Self-Management as well as the Program of Measures for Development, Diversification And Improvement of the Quality of Services to the Public in 1984-1985 approved by the Permanent Bureau of the Political Executive Committee of the RCP Central Committee lent a powerful impetus to the development of these activities in regard to both their high growth rate and the diversity of their quality. In 1984 the volume of services to the public amounted to more than 67.7 billion lei (768 million lei above plan), to the value of 20 percent of the total volume of commodity sales and services to the public. The economic and social roles of services in meeting the rural and urban public's demands were enhanced in this way. This year it is planned to perform a per capita volume of services in each county amounting to at least 1,000 lei and to at least 2,000 lei in Bucharest.

More pronounced development of services for maintenance and repair of consumer durables, clothing and footwear, dwellings etc. is specially emphasized, with adequate use of the good technical-material base of the county seats and workers centers in particular. Services in fields somewhat neglected before but of particular social importance will be developed more intensively, such as tourism,

sports and recreational and cultural-educational activities, for purposes of the most pleasant and instructive use of leisure time.

In the rural areas, alongside the units for tailoring, shoemaking, barbering, carpentry, the furrier's trade etc., which will be further expanded in all areas, the people's councils with the direct aid of the Union of Agricultural Cooperatives and CENTROCOOP will take steps to further diversify the assortment of agro-zootechnical and veterinary services and those for industrial processing of the agricultural producers' products and also to organize new activities to meet the particular needs of the rural population (incubation and delivery of 1-day chicks, arrangement of cooperative sheepfolds, rental of agricultural machines and tools). In the same way, efforts will be made to create increasingly good conditions for accomplishing the goals set in the local self-management and self-supply programs. Moreover UCECOM [Central Union of Artisan Cooperatives] jointly with the central and local organs concerned will analyze the extent of the present equipment of the urban localities with service units, in proportion to the public's demands, and will take measures to make a major contribution to the exploitation of the local resources. To this end and in conformity with the provisions of the program, there must be more pronounced increases in the activities in connection with utilization of the materials and spare parts resulting from purchases from the public of consumer durables, used articles of clothing and footwear, construction materials coming from demolitions and other recoverable and reusable materials, along with more efficient use of the assigned raw materials. These activities demand great initiative and responsibility, receptiveness and an economic spirit.

Especially high standards must be set the quality of the services and observance of the approved time limits, prices and rates, with a regular effort to promote the standards of ethics and fairness in relations with the public. The total volume of services will be increased from 32.6 billion lei in 1983 to 41.5 billion lei in 1985. More pronounced increases are planned in the services for maintenance of electronic and electric household appliances, laundries and chemical cleaning establishments, construction and repair of dwellings, tourism, recreation, sports, culture, art etc.

The central organs with service tasks and the people's councils will also take measures for better use of the existing technical-material resources, their development through self-equipment programs, expansion of the service units in new districts of cities, training of the needed personnel, turning over some small units to management and administration for pay (in conformity with Decree No 101 of 1980), more intensive guidance and control, improvement of services, etc., thus enhancing services to the public and the economic effectiveness and profitability of every unit.

Exemplary fulfillment of the provisions of the Program for Regional Self-Supply and Self-Management by supplying the public with agricultural food products, industrial goods and services in a diversified assortment of good quality will ensure the continuing improvement of the entire people's living standard and quality of life, which is the major aim of RGP policy.

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